Asian J. Psychol Educ.
Vol. 13 1984
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THE ASIAN JOURNAL OF PSYCHOLOGY AND EDUCATION

079197

1984 } JANUARY : VOLUME 13 { NO, 1

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 1-3

Muller-Lyer Illusion in Relation to Sex and Frustration

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AND

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The present study was aimed at investigating the effect of sex and frustration on the magnitude of Muller-Lyer illusion. For this 30 male and 30 female undergraduate students were selected and the magnitude of M-L illusion was determined under single and repeated frustration treatment. Frustration was induced in the subjects by the method of falsifying scores combined with condemning the Ss for their alleged failures. The method of adjustment was used. The result indicated that in case where frustration reduced illusion, the male students had more reduction in illusion than the female students and in case where frustration increased illusion, the female students had more increased illusion than the male students.

INTRODUCTION

Sex is considered to be a major factor in the response to the external stimuli. Walter (1942) conducted two experiments, one with M-L illusion and the other with horizontal-vertical illusion to see whether sex plays a definite role in the extent of illusion. Definite sex-defferences were found at 9 years of age, although the direction of the two curves of M-L and H-V illusions for boys and girls was in general the same until 11 years of age. But from ages 11 to 17, the illusions for boys steadily decreased and the two curves crossed at about age 13 and again at about 18. The sex-difference in horizontal-vertical illusion was manifested at all age leavels. The boys at all ages had a somewhat higher illusion scores than the girls, but the general trend of the two curves was the same. Dewar (1967) also repeated that female Ss showed a slightly higher illusion than did males. A close relationship had also been found between sex and frustration. The males and females react differentially when they receive frustration before performing the given task. Younge (1964) found that frustrated women attempted disproportionately more problems and made disproportionately more errors. Norman et.al (1964) found that under high frustration conditions males showed a significantly greater decrement in perfomance than did females, whereas in no-frustration condition the females showed decrement, while males improved. Devi (1967) also found sex-differences in reaction to frustrating situations. He found that female Ss were aggressive and liked withdrawal behaviour more than males.

Problem

It is hypothesized that frustrated females would have larger extent of illusion than frustrated males. Further, it is expected that repeated frustration would make the females more susceptible to illusion than the males.

Sample :—30 undergraduate boys and 30 undergraduate girls with age ranging from 16 to 20 years were selected as subjects and they were divided into three sub-groups, viz. no-frustration group, single frustration group and repeated frustration group.

Method :—The extent of M—L illusion was measured by the method of adjustment. The Arrow-headed line of 50 mm was fixed for standard. The subjects were asked to manipulate the featherheaded line so as to make it equal to the standard line. Only 10 trials were given to each subject to minimise the practice effect. The trials were given in RI, RO, LI and LO design to counteract the movement and space errors.

The frustration effect was introduced in the single frustration group with the following verbal remarks just in the beginning of the experiment and again after they had taken two fake trials of adjusting the variable line to that of the standard line.

"Well, it is expected that you will correctly perform this simple task of adjusting the feather-headed line to that of arrow-headed line. But it is surprising that your performance is most disappointing, it is not even at par with that of the mediocres. Try to be accurate in adjusting the variable line to that of the standard line". 10 trials of line-adjustment was given to each subject after this frustration treatment.

The repeated frustration group was also given the above frustration treatment just in the begining of the experiment and again after 5 trials they were subjected to frustration with the following remarks :—

"Inspite of my reminder you have miserably failed to improve your performance. You are given a few more changes before I finally form my opinion about your capacity to perform and put it on record. What others will think of you if I tell them about your consecutive failures on such simple problems". All possible steps were taken to ensure the most uniform presentation of these remarks to all subjects.

RESULTS

	Males			Females		
Group	NF	SF	RF	NF	SF	RF
Mean	7.51	6.18	8.29	8.79	7.31	10.5

Discussion & Conclusion—The results indicate that the frustration produced differential reactions in males and females. In the cases where frustration reduced illusion, the degree of reduction was more in the males than in the females. In the cases where frustration increased the magnitude of illussion, it was found to be more in case of females than in males. In both sexes reduction in magnitude of illusion was found after single frustration treatment. In males the reduction was 1.33 mm (7.51—6.18) and in females 1.48mm. (8.79—7.31). But both sexes lost their accuracy after repeated frustration. In the females the magnitude of illusion was more than the males by 2.21 mm. Thus the result reveals that females were more sensitive to frustration than males. They also lost their accuracy more than the males.

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Abnormal Psychology :
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By
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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 4-6

Economic Status as a Determinant of Tension Among Youths

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The present study was undertaken to ascertain that economic status may be a relevant variable as far as tension in the youth is concerned. The sample of the present study consists of 704 students belonging to three different economic groups i. e. High income group, middle income group and low income group in the age range of 18 to 22 years. Our hypothesis that economic status may be a relevant variable as far as tension in the youth (students) is concerned, is partly confirmed by the findings.

Money is an instrument for the satisfaction of biological as well as social needs like prestige, power, recognition, etc. If a person has money he can engage in successful transactions with others and acquire whatever he likes. This simple rationale leads to the position that mean tension scores of the three economic groups should be arranged in the following descending order : Low-income group, middle income group and high income group. Thus, the present study was undertaken to ascertain that economic status may be a relevent variable as far as tension in the youth is concerned.

Sample : A total of 704 students belonging to three different economic groups i. e. high income group (n=141), middle income group (n=330) and low income group (n=233) in the age range of 18 to 22 years served as subjects for the present study.

Statistical Ttreatment : Mean, SD and Critical Ratios (CR) were calculated for testing the significance of difference among three groups on the mean tension scores.

Procedure : Mean tension scores of the three groups namely, high tension group, middle tension group and low tension group were arranged which were taken as the measure of tension on the basis of composite standard scores on Anxiety Scale (Khan and Hasan, 1981) Insecurity Scale (Maslow, 1952) and Cattel's Q4 Questionnairs (1962).

RESULTS AND DISCUSSION

TABLE - 1

Showing Means and SD's of three income on tension.

	n	Mean	SD	CR
1. High Income Group	141	18.585	4.504	1 Vs 2 = 1.157
2. Middle Income Group	330	19.107	4.318	1 Vs 3 = 0.456
3. Low Income Group	233	18.375	4·158	2 Vs 3 = 2.000 $p<.05$

The analysis of the tension scores of the respondents belonging to three income groups namely, high income group, middle income group and low income group (table 1) shows that there is no significant difference in the comparisons of high income Vs middle income group, and high income group Vs low income group. It is true that people from higher income group have every reason to be tense, youth coming from such families may not feel tense. They get enough money to eat, drink and be merry and may not be exposed to anxiety and insecurity which their elders may be experiencing. Further, they may not be apprehensive about the future they are sure to be well placed in life.

The low income group remains invariably satisfied with their lot and never get entangled in the race of competing with the high income group. The income of this group is so badly squeezed and squeezed to the extent that they do not bother much about decent and respectful living. Further, by disowning the responsibility for its miserable condition of life and attributing it to fate, or karma etc., they can easily escape from tension.

The analysis further reveals that there is a significant difference between middle income group and low income group (CR = 2·00). The economic condition of middle income group in respect of financial stability is quite vulnerable. Middle income group in Indian society are more tradition conscious and are invariably in a mood to bring themselves at par with the high income group of the society. In their anxiety to make them distinct from the lower group, member of this class apt the traditions of high income group. It makes them anxious and tense to realize that they are not what they themselves are supposed to be. As a matter of fact the pace of development of aspirations of the high income group is beyond imagination but the middle income group wants to adopt their norms, traditions and style of living. Youth coming from this section of society feel insecure about their social status and are apprehensive that their search for a suitable occupation may not be as much successful as to settle them at the desired level of income and status. Moreover, while dependent on their parents they may not be getting enough money to live in the style in which they would like to live.

Thus, our hypothesis that economic status may be a relevant variable as far as tension in the youth (students) is concerned, is partly confirmed by the findings.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1 Page 7-10

Values Correlates with Effective Teachers

Shanti P. Bohra,
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240 teachers of secondary schools of Jodhpur were administered 'Teacher Effectiveness Scale' (Kumar and Munha, 1973). On the basis of scores on teacher effectiveness scale the teachers were devided into two groups, 60 were placed into effective teachers and 60 into non-effective teachers. After that Allport-Vernon and Lindzey-study of values (Indian Adaptation by S. P. Kulshrastha, 1971) was administered to both groups. Results showed the significant difference in the two groups on Theoretical, Economic and Political values.

"A value is a conception, explicit and implicit distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of action". (Edward Stranger, 1928).

Values occupy important place in human behaviour as they form basic motivational forces affecting human behaviour. It is argued that people with different values, orientation tend to be attracted to different occupations ; occupations providing satisfaction to their value orientations.

The values aim to measure the relative prominance of six basic interest or motive in personality viz., Theoretical, Economic, Aesthetic, Social, Political and Religious (Edward Stranger, 1928). The theoretical man is dominated by the discovery of truth and his main purpose in the life is to bring order and systematization to his understanding. The economic man is concerned with that which is useful and practical in a definite materialistic sense. The asethetic man is interested in form and harmony and his primary concern is beauty rather than truth. The social man is concerned with love for other people in a altruistic and philanthropic sense, a selfless love for mankind. The political man is primarily dominated by power for control over people and events and lay needs for personal influence. The religious man is concerned with a sense of unity, a need for establishing a transcendental understanding of the universe in some personal way (Edward stranger, 1928).

Seagde (1946), reported a positive relationship ($r = +.26$) between aesthetic value and their field of success. Tanner (1954), has found that superior woman teachers scored higher on economic and social values besides theoretical values. Andrew (1957), has reported woman teachers have higher scores in general on theoretical values than male teachers. Kirchner and Hogan (1968), have found teachers as such scoring higher on thoretical, economical and political values. Harris (1934), Paul (1970), Allport-Vernon and Lindzey (1956), have found that student teachers score higher on theoretical values. Kaul (1972), found that popular teachers of secondary level score higher on theoretical, social, political and religious values.

Mutha (1979), on the other hand has found that only two values differentiated between the effective and non-effective teacher. The effective teachers were found to be having higher score on thoretical values while non-effective teachers were found to be having higher score on political values.

The present study is an attempt to find out the value differences between effective and non-effective teachers.

METHOD

(i) **Sample :** 240 teachers of the secondary shcools of Jodhpur city were taken, the mean age 33.6 years and age range 28-36 years. They were categorized in the effective and non-effective catagorized on the basis of teacher effectiveness scale (Kumar and Mutha, 1973). Those scoring above 312 were placed in the catagories of effective teacher (N=60), those scoring less than 272 were catagorized non-effective teachers (N=60).

(ii) (a) **Tools :** Teacher Effectiveness Scale (Kumar & Mutha, 1973), this scale consist of 69 items in the form of statement, concerning various function of teacher. The subject is required to answer each item by marking (1/4) in any one of the five categories, which best represent his position on that statement. The five catagories are :—

(a) Fully agreed, (b) agreed, (c) undecided, (d) disagreed & (e) Fully disagreed.

The reliability of this scale was, 75 (retest reliability) and validity, 77 (content validity).

(b) Allport-vernon and Lindzey-study of values (Indian Adaptation by S. P Kulshrastha, 1971) The questionnaire measures six dominant interest of personality with is the half a statement regarding various values. Split half realibility of scale ranging from .83 to .90 and validity of this scale ranging from .55 to .90 (cofficient correlation).

PROCEDURE

The Hindi version of value test by S.P. Kulshrastha was administered to the effective and non-effective teachers, selected earlier on the basis of teachers effectiveness scale. The questionnaire administerd was individually. The procedure followed as prescribed in the respective manuals.

Test of Inference : '*t*' test was used as a test of inference to find out the significance of differences between the values make-up of effective and non-effective teachers.

RESULT

The relationship between teacher effectiveness aud values was studied by assuming that the two criterian groups effective and non-effective teachers group differed significantly on all the six values vix., theoretical, economic, asthetic, social, political and religion.

TABLE-1

The Table Showing the Mean and S. D. and Significance difference between Effective and non-effective teachers.

Values	*Effective Teachers* N=60 Mean	S.D.	*Non-Effective Teachers* N=60 Mean	S.D.	't' df=118
Theoretical	44.88	6.00	41.66	5.91	3.12**
Economic	39.55	6.30	42.89	6.42	3.03**
Aesthetic	36.1	5.72	37.92	5.77	1.82
Social	41.4	6.71	41.25	6.43	.18
Political	41.06	6.32	47.38	6.71	3.82**
Religious	39.33	6.34	41.60	6.89	1.97

(**P < .01)

But this was found that out of six values, only three values differentiated between the effective and non-effective teachers. The effective teachers were found to be having higher scores on theoretical values while non-effective teachers were found to be having higher scores on economic and political values. The scores are given in table one.

DISCUSSION

In selecting goals, in choosing means for reaching them, in resolving conflict, an individual is influenced at every turn by his conception of the preferable, the appropriate, the important, the goods, the desirable by what he sees as having values. The kind of relationship he establishes with his wife and children, the way he transacts business matters, the degree of respect he has for others (and for himself) his poliitcal and religious activity, and the patterning of his everyday behaviour, all those represent choices from among alternatives according to his heirarchy of values.

In the present study the effective and noneffective teachers were differentiated statistically significantly on theoretical values, economic values and political values. However, the effective teachers had higher scores on theoretical values, meaning thereby, their mind concern had been regarding truth and are having ordered and systematized understanding. Mutha (1979) also reported similar findings. On the other hand Kirchner & Hogan, (1968) reported teachers as a whole scoring higher on theoretical, economical, and political values. The non-effective teachers in our study scored higher on economic and political values that meant they have tendencies for materialistic and need for power to control and personal influence. It seems that the effective teachers had more idealistic tendencies than the non-effective teachers. Flander, (1970) has viewed that effective teaching learning process as one in which the teachers' direct influence is kept at a minimum. The teaching learning situation implies the democratic outlook on the part of a teacher, thereby allowing more freedom to children to participate. A teacher having a tendency to dominate is likely to have more direct influences which is not conducive for effective teaching learning process.

Values ofcourse are not the determinants of behaviour. Any act reflects the wide range of inner and outer determinants, including the individual's assumption about reality and possibility, his immediate motivational patterns and various situational factors. In general, however, it is his choices that shape and type of life he builds for himself and the kind of person, he becomes and these reflect his basic values.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 11-19

PGs Want A Change-over to Internal Assessment

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There is a cry everywhere to reform the present examination system. The defects of the external examination at the end of the year are too well known. The fear of the unknown torments the student as a spectre hovering over his head and as the doomsday nears, he begins to burn the midnight oil and spends many a sleepless night.

The duty of the teacher is to teach, guide and test the learning process. So examinations are as old as the formal system of education itself. The history of education in ancient India provides enough evidence to show that various types of examinations were an integral part of the system of education in the past. Since then there were many changes and reforms in the Indian education system and along with it in the type of examinations, which were brought about through several committees and commissions.

As early as in 1931 the Hartog Committee suggested that careful and systematic experiments were needed to improve the methods of examinations. It was totally opposed to the complete abolition of examinations. The Norwood Committee condemned the whole system of external examinations and envisaged the substitution of internal assessment (IA) in its place. In the words of Sir Radhakrishnan's report (1948), if any single reform in the Indian education has to be brought about urgently, it should be in the examination system. The Secondary Education Commission (1954) observed that the final assessment of the pupil should not be based upon the results of the external examinations alone. Other things such as internal tests and records maintained by the teacher should be given due credit. In the U.G.C. report (1962), Dongerkery observed that periodical tests should reveal to the student his progress in studies and advocated introduction of internal assessment (IA) to supplement the external examination. He pointed that reforms in examinations cannot be brought about without improvement in the methods of teaching and learning. The report of the Education Commission (1966) also laid stress on IA.

That suitable methods of assessment have to be developed and employed continuously throughout the course of instruction cannot be over-emphasized. Jaganatha Reddy (1970) stressed that class records, dialogues and discussions, objective tests, open book tests and a combination of all these should be tried. Balabhadra Prasad (1961) pointed out that more frequent examinations, if they are attached some value, would make the students more serious in their studies. This would produce better results and reduce wastage. Further, internal assessment gives greater scope for the student to show a variety of abilities in a natural setting. The thinking of different educationists is summarised in what Ramasarma (1970) pointed out : "The old system is considered to be thoroughly unsuited to the present day conditions, and the consensus is that it has outlived its usefulness ; the only concrete suggestion that is made by almost all educationists is that internal assessment should be introduced in the place of the present system of examinations." No wonder the U. G. C. has decided to get the system introduced at the post-graduate level to start with, and has selected a few Universities to experiment the procedure.

It need not be pointed out, that before introducing any new system it would be appropriate to feel the pulse of the students towards the system and identify the areas where they have a negative attitude towards it, so that care may be taken to remove their fears by plugging the loopholes, if any, which would forestall complications in the smooth implementation of the system.

Problem

Hence, the problem selected for the present investigation is to study the attitude of different sections of post-graduate students towards IA. Further, it is held by some, that bright students favour IA. No research evidence, however, is available to support the above belief. Therefore, it is intended to find the relation between intelligence and attitude towards IA.

Sample

The sample for the study was 240 students, selected by a three stage stratified random sampling procedure from two postgraduate colleges belonging to Rayalaseema area comprising of 5 districts. The sample was distributed equally among the Arts and Science faculties, I and II year classes and among the two sexes. At the outset the P. G students were divided into two groups as Arts and Science students of the faculty to which they belonged. They were further divided on the basis of the year of their study as previous (I year) and final (II year) students. Each of the above four groups was divided into two on the basis of the sex of the students. From each of the 8 sub-groups (2 faculties × 2 years × 2 sexes) thus obtained, 30 subjects (Ss) were selected at random giving 240 Ss for the study.

All the Ss had the traditional system of examination. However, they were aware of the proposal to introduce internal assessment.

Method

For the purpose of the present investigation IA was defined as that system, where evaluation of the students' progress in learning was made by the teacher, through periodical tests, seminars, debates, etc., and the marks obtained in all these were totalled up to give the final grade.

An attitude scale developed by the author to measure the attitude of students and teachers towards IA was used in the present study. At the outset a large number of opinions about IA were collected from teachers, students and books. From this pool of items 52 statements that were judged to be highly relevant were sorted out with the help of experienced teachers and an attitude scale was prepared. Each of the items was arranged on a 5 point rating scale, with the five alternatives strongly agree, agree,......strongly disagree. . This preliminary form was administered to a group of 200 students and the criterion of internal consistency (Likert, 1932) was employed to find the validity of the items. This method was used as it gives as valid results as those obtained by the traditional method of item analysis, but at the same time it is much less laborious than the latter (Likert, 1932 ; Edwards, 1969). 40 items that were found to have a high discriminative power were selected to be included in the final from. Among the 40 items 19 were positive while 21 were negative. The items were randomised to avoid the possiblity of any response set, and the final form was prepared.

The scoring procedure was also in accordance with Likert (1932) who found that scores based upon the relatively simple assignment of integral weights correlated. 99 with the scores obtained by the more complicated normal deviate system of weighting. Weights of 5, 4, 3, 2, and 1 were given to the five categories of responses 'Strongly Agree', ...'Strongly Disagree' respectively in the case of favourable statements. For unfavourable statements the scoring system was reversed with the 'Strongly Agree' response getting a score of 1 and the 'Strongly Disagree' response getting a score of 5. The score on any item could, therefore, vary between 1 and 5 and a score of 3 could be considered as the neutral point. Thus the total score of any individual on the attitude scale could range between 40 and 200 and the neutral point would be 120 (Shaw and Wright, 1967).

The split-half reliability of the attitude scale, corrected for full length, was ·97 with an N of 100. As all possible items were selected from a number of sources and as they were judged to be relevant for measuring the attitude towards IA as defined in this study, the attitude scale could reasonably be well assumed to have content and construct validities.

To the above 40 items were added two general questions. One of them was a specific question whether IA should be introduced or not. Apart from getting a direct answer to the burning question whether there should be a change-over to IA or not, this would serve as a check on the validity of the attitude scale, because an individual who has an unfavourable attitude towards the system as measured by his responses to the different items would not favour its introduction. The second question was intended to assess the opinion of the Ss about the weightage to be given to IA.

The attitude scale was made anonymous to ensure that the Ss expressed their opinion freely and frankly.

The instrument was adiministered to the sample of Ss insmall groups in their respective departments after explaining the meaning of internal assessment as defined earlier, to avoid different interpretations of the term by different Ss. In addition to this, the mental ability of the Ss was also measured using Raven's Standard Progressive Matrices Test (RPMT).

RESULT AND DISCUSSION

At the outset the distribution of the responses of the Ss in the five alternatives for each of the statements was analysed by Chi-Square test of equal probablity to see whether the responses were simply randomly distributed. The obtained Chi-Square values were highly significant even at 0·001 level. This shows that the reponses of the Ss were dependable.

The mean attitude scores and standard errors of different subgroups of Ss are shown in Table-1. It may be seen that the mean score of the whole group of Ss was 125·55 which is higher than the neutral point (120). The difference between the mean score and the neutral point was tested for significance by applylng *t*-test. The *t*-value obtained was 3.92 significant at 0.01 level. This shows that the students as a whole, had a significantly favourable attitude towards IA.

TABLE 1

Means and SEs of the attitude of different sub-groups of Ss towards internal assessment and the corresponding *t*-values, the means and SEs of the mental ability (RPM) scores of the Ss and the correlation (*r*) between attitude towards internal assessment and mental ability.

Group	Attitude score			Mental ability score		*r*
	Mean	SE	*t*-value	Mean	SE	
Whole group	125·55	1·51	3·92**	49·02	·39	—·01@
Arts	125·91	1·54	3·84***	46·97	·57	—·05@
Science	125·18	1·48	3·50***	51·08	·46	+·03@
Previous	128·98	1·34	6·71***	48·81	·54	+·04@
Final	122·11	1·61	1·31@	49·23	·57	—·04@
Male	122·57	1·54	1·67@	48·18	·50	+·01@
Female	128·52	1·44	5·93***	49·87	·59	—·11@

Notes :

1. The *t*-values in column 4 indicate the significance of the difference between the mean attitude score and the neutral point (120).
2. In each sub-group Arts, Science etc., N= 120 and in the whole group N =240. This is true for table 2 also.
3. *** Significant at 0·001 level
   ** Significant at 0·01 level
   * Significant at 0·05 level
   @Not significant at 0·05 level
4. The same notation is used to indicate the level of significanee of *F*-ratios in table 2.

Considering the different sub-groups, the mean scores for the Arts and Science faculties were 125.91 and 125.18 respectively. The mean score of the I years (previous) was 128.98, while that of the II years (final) was 122.11. The mean score of men and women students were 122.57 and 128.52 respectively. All the mean scores were above the neutral point, indicating a positive or favourable attitude towards IA. However the mean score of men students and that of the final years were not significantly different from the netural point.

Further analysis of the mean scores of the different sub-groups of Ss was made using analysis of variance of a 23 factorial design. The results of this analysis (presented in Table 2) show that the F ratio was not significant for the faculty variable, showing thereby that there was no significant difference between the attitude of the students of the Arts and Science faculties towards IA. But, the F ratio for year of study was significant at 0.001 level for 1 and 232 df indicating a significant difference between the I and II year with regard to their attitude towards IA. The I years had a more favourable attitude towards the system than their counterparts in the II year.

TABLE 2

F ratios obtained from analysis of variance of the attitude and mental ability scores of the Ss.

Variable	Group	Mean attitude score	F ratio (df=1/232)	Mean RPM score	F ratio (df=1/232)
Faculty	Arts	125.91	0.12	46.97	31.30***
	Science	125.18		51.08	
Year of study	Previous	128.98	10.84***	48.81	0.33
	Final	122.11		49.23	
Sex	Male	122.57	8.14**	48.18	5.31*
	Female	128.52		49.87	

Note : 1. The F ratios for the different 2 factor and 3 factor interaction effects were less than 1 and are not shown to conserve space.

2. See note under Table 1.

In the same manner, women students showed a greater preference for IA than men students (F significant at 0.01 level). None of the interaction effects was significant.

The final year students had one and a half years experience in the university, while the previous students had only three months acquaintance with the 'university life'. A significant difference between the attitude of the I and II year students may be due to the difference in the familiarity of the I and II year with the university atmosphere especially in respect of evaluation. Does this mean that the I years, fresh from the undergaduate classes, think that assessment by periodical tests conducted by the concerned teachers would be valuable while the II years who took a university examination and saw how their performance was evaluated reduced their faith in IA ?

In the university where this investigation was conducted, the question papers for the university examination are always set by experts outside the university. There is a system of confidential code numbering of the answer books of the students and it is difficult, if not impossible, to identify the answer script of any individual. Further, a procedure of double valuation, where two examiners value each of the answer papers is followed, one of the examiners designated as 'external,' invariably belongs to some institution outside the university area. The other examiner called 'internal' usually, though not in all cases, belongs to the university. Both the examiners, each of whom does not know the other, value the papers and send the marks lists to the university. The candidate is awarded the average of the marks given by the two examiners. Further, difference between the marks awarded by the two examiners to any candidate should not exceed 14. If in any case the difference exceeds this limit, the paper is sent to a third examiner and the marks awarded by him is final.

In spite of such a meticulously careful system, developed to avoid bias in the evaluation of the knowledge of the students, it appears that the students think that several extreneous considerations infiuence the teachers in the evaluation of their performance.

A careful examination of the responses of the I years and those of the II years to each of the statements showed that large number of I years than the II years agreed with most of the positive or favourable items. For example for the statement 'If IA is introduced students would devote more time to their studies', 83% of the I years marked either 'strongly agree', or 'agree' response. Among the II years, however, only 61% gave such a response. Similar trend of response was seen on most of the positive statements. It may be seen from the above results that results that though lesser percentage of II years than their counterparts in the I year agreed with the favourable items, the percentage of even the II years who agreed with these statements was more than 50. This shows that a majority of even the II years feel that IA would be beneficial in some respects. In the unfavourable statements, however, the trend of response was entirely different. More number of II years than their counterparts in the I year agreed with many of them, showing that the II years seem to be more suspicious about the objectivity of the teachers in evaluating their progress.

The tenability of the above hypothesis that the reduction in the attitude of the final years students towards internal assessment may be due to the universisty, and by virtue of the teachers' honesty and integrity, could be empirically tested by following-up those 120 students of the I year who served as Ss in the investigation, and measuring the attitude again when they go to the final year. This study would be valuable since it would reveal whether the students do really suspect the teachers' evaluation of their achievement.

On most of the statements the score of the woman students was slightly higher than that of the men students resulting in a significant difference on whole, between men and women students in their attitude towards IA. It is possible that women students have more patience and devote more time to their studies, which are essential in IA because of periodical tests, etc., compared to men students who have many avocations, useful or useless, other than their studies. This might have resulted in a significant defference between the mean scores of the two groups.

Correlation between attitude and mental ability

The product moment correlation between the mental ability (RPM) scores and the attitude scores was computed for the whole group of 240 Ss and also for the different sub-groups. Most of the correlations, as could be seen from Table-1, were very low, and some were negative. None of them were statistically significant. This shows that there is no significant relation between mental ability of the Ss and their attitude towards IA.

Weightage to be given to IA

An analysis of the responses of the Ss for the question whether internal assessment should be introduced or not showed that on the whole, 52.5% of the Ss wanted the new system to be introduced. A significant point that may be noted is that even among the final years 47% wanted a change-over to internal assessment, while 58% of the first years expressed a preference for the new system.

A further analysis of the responses of those who wanted a change-over was carried out to find whether they preferred partial or complete internal assessement. It was found from this analysis, that only 8% of the Ss preferred complete internal assessement, while 53% felt that it should be only for 25% of marks. The remaining 39% expressed that IA should be for 50% of marks.

A Caution

It may be noted in this context that the students who participated in the study did not have any experience with IA either at the post-graduate level. Their responses to different items are based upon their experience with the traditional system of year-end examination with its countless pitfalls. Yet the fact that a large percentage of all categories of Ss agreed with the positive statements shows that they are aware of the value of the new system. This is indeed a happy augury and goes well with the intention of the University Grants Commission to get the system implemented at the post-graduate level to begin with. However, it is needless to point out that careful planning about the modalities of implementation of the system is essential so that the loopholes of the system are plugged out avoiding the possibilities of the system landing in difficulties as has happened in some institutions where the system was haphazardly introduced.

Further proof of the validity of the attitude scales

As pointed out earlier. a direct question whether the students favoured introduction of the new system of evaluation or not was expected to serve as a measure of the validity of the attitude scores of the Ss, because an individual who has a favourable attitude towards IA as measured by his responses to the different statements, would favour its introduction and give an 'yes' response to this question. To probe into this aspect, point biserial correlation (rpbis) (Garrett, 1973 ; Guilford and Fruchter, 1978) between the scores of those who wanted a change-over to IA and those who did not want it was calculated. The rpbis thus obtained was .419 highly significant even at 0.001 level, showing the validity of the scale. The mean score of those who wanted IA to be introduced was 132.11 while that of those who did not want it was 118.28. The difference between these two means was also highly significant ($t = 6.99$ significant at 0.001 level for 238 df.

Mental ability of men and women students

It could be seen from Table-2 that the mean mental ability score of Science students was significantly higher than that of Arts students, which is not surprising. The mean score of women students was 49.87 while that of men students was 48.18. The difference was significant at 0.01 level. This may be because only capable women students and those from higher socio-economic strata enter the university compared to men students, because in India even today, a job is a must for men rather than to women, and unfortunately, to get a decent job university educatioa has become essntial.

Summary and Conclusions

The attitude towards internal assessment of 240 postgraduate students, selected by a three stage stratified random sampling procedure, using a questionnaire designed for the purpose. It was found that the Ss in general had a slightly favourable attitude towards the system. Students in the I year had a more favourable attitude towards internal assessment than their counterparts in the II year. Women students preferred it more than men students. Nearly 50% of the Ss the all sub-groups wanted a switch-over to internal assessment. Out of them only 8% preferred complete internal assessment while 53% expressed that internal assessement should be for 25% of marks only. Different aspects of the problem were discussed.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 20-24

Recall of Pictures and Words in Pal of Normal and Educable Retardates Employing S-Generated and E-Supplied

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INTRODUCTION

Recall process has attracted the attention of many psychologists in past as well as in present. A brief survey of studies in recall in PAL will not be out of place here in the context of the present study. Paivio's (1971) assumption seems reasonable that objects are more concrete than pictures and pictures are more concrete than words. By their definition objects are supposed to be more concrete than pictures and pictures being mere representation of objects are not as detailed, and words are still symbolic, and therefore always general (Iscoe & Semler, 1964). Recall with object pairs is usually better than with picture pairs and in the same way better recall has been obtained with pictures pairs than with word pairs (Evertson & Wicker, 1974; Rohwer & Ammon 1971). But certain exceptions have also been found e. g. Yuille & Catchpole (1973) got no difference. On the other hand usual difference in recall of pictures and word pairs was obtained when imagery instructions were given to normal and retarded children (Yarmey & Bowen, 1972). Yarmey & Sayer (1972) demonstrated that word pairs were more effective than picture pairs. Dilley & Paivio (1968) investigated the comparative effects of pictures and words on the stimulus as well as response sides of PAL given as under :

(Picture–word Picture–Picture=Word–Word word–picture) and showed that for children pictures are more effective than words on stimulus side but words are more effective than pictures on the response side. Free recall has been found to be better for objects/pictures than for words (Anderson, 1976; Jordon, Ackerman & Wicker, 1977).

The present study aims at filling in a gap in our knowledge of recall of pictures and words in PAL among normal and educable retardates. Retardates are a challenge to all the social scientists in general and to Psychologists in particular. Hence the present investigators

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studied the educable retardates and compared them with normals as far as their recall of pictures and words in PAL is concerned. The results of present study may be of great significance to educationaists social workers and psychologists especially concerned with the educational problems of retardates.

METHOD

Subjects : 160 Ss studying in B. A. (1) were used Half i.e,, 80 were normal or above (having an I. Q. of 80 +) and the rest were below normal (having an I. Q. of less than 80). Group of Ss having an IQ of less than 80 were treated as educable retardates. The American Association on Mental Deficicncy makes a significant departure from the former practice of setting the cutting point at near Binet's IQ 70. In view of the above departure by American Association on Mental Deficiency the present authors dlstinguished between nromals and educable retardates by IQ 80+and below 80.

Materials : The following 4 lists were used.

1. Picture-Picture combination in S-generated Strategy-It comprised of 20 pairs of unrelated pictures for S and R. e. g. Picture of a book and Picture of a Rose, The S's have to recall the response picture after seeing the picture presented as stimulus.
2. Picture-word combination in S-generated strategy-In this list 20 pairs of unrelated picture word combinations were presented e. g. Picture of a Book-Rose, where the S's were instructed to recall the word presented alongwith the picture.
3. Picture-Picture Combination in E-supplied strategy—In it 20 pairs of such picture-picture combination were presented as were related with each other in some way or the other e.g., Picture of a book—picture of a student.
4. Picture-Word Combination in E-supplied strategy. This list consisted of 20 pairs of related picture-word combination e.g., Picture of a Book and the word Student.

Experiemental Design

A 2 × 2 × 2 factorial design was used which included two types of S's—Normal and educable retardates : two types of sttmuli-Picture-picture and picture=word combination, and two types of strategies S-generated and E-supplied.

Procedure

PAL procedure was employed with 20 cards bearing only the stimulus word on one side and the stimulus-respsnse pair on the other. The cards were shuffled every time a trial was taken and were shown to the S's on seven trials. On the 8th trial they were instructed to recall. The same procedure was repeated in all the conditions. The S–R pairs consisted of picture-picture and picture-word both for normals and educable retardates.

In S-generated strategies four presentations of picture-picture or pieture word were given, S and R being quite different from each other e. g. Pencil-Telephone. In E-generated strategies S and R word were related e. g. Apple-Tree.

RESULT & DISCUSSION

TABLE-1

Mean number of correct responses in 8th trials

Subjects	Normal				Educable Mentally Retardates			
Strategy	S-generated		E-supplied		S-generated		E-supplied	
Combination	Picture Picture	Picture word	Picture Picture	Picture wore	Picture Picture	Picture Word	Picture Picture	Picture Word
	6.95	9.5	9.95	13.5	3.95	4.5	5.5	5.95

TABLE-2

Summary of three way Analysis of variance

Source	Sum of Squares	df	Mean Square	F-ratio	Level
A=Subject	1000	1	1000	854.7	.01
B=Strategies	171.45	1	171.45	146.54	.01
C=Combination	126	1	126	107.69	.01
A × B	40	1	40	34.19	.01
A × C	65.025	1	65.025	55.58	.01
B × C	2.025	1	2.025	1.73	NS
A × B × C	14.55	1	14.55	12.43	.01
Within	178.05	152	1.17		
TOTAL	1597.1	159			

An observation of table-I reveals that (a) the performance of normal Ss is better than retardates, (b) scores in E-supplied strategy are higher (C) the picture-picture combination is more effective than picture word combination.

In order to examine the statistical significance of the trend revealed by the data three way analysis of variance as shown in table-II was computed. The obtained F-ratio for Normals & retardates is highly significant and the retardates definitely manifest deficiency in memory, task. It may be supposed to be due to their lower IQ. The above finding is consistent with the results of Yarmey & Bower (1972) in which they obtained usual difference in Picture and word pairs. The obtained F-ratio for S-generated and E-supplied strategies is significant beyond doubt. It leaves no doubts about the relative superiority of E supplied over S-generated strategy. The possible reason for this may be quickly mediated imagery in case of E supplied strategy. This finding contradicts the earlier data of Bobrow & Bower (1969), Peiton (1969), Bower & Wengeng (1970). The F-ratio obtained for Picture and picture-word combination is significant at .01 level of confidence indicating the superiority of picture-word combination. The recall was better when picture served as a stimulus than as a response. It demonstrate that imagery value of pictures is greater than those of words. This finding supports the results obtained by Bower (1972), Cramer (1975), Dilley & Paivio (1968) Pavio & Yarmey (1966) and Yarmek & Sayer (1972) and conradicts the findings of Calhuon (1974). Besides that all the interactions too are significant which provides further confirmation to the significantness of the obtained F-rations. The investigators hope that present study may spark researches dealing whith the learning & remembering problems of retardates.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 25-29

A Study of Relation Between Self-Disclosure and Anxiety

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42 randomly selected adolescent males and females were administered Sinha's Self-disclosure inventory and Sinha's Comprehensive anxiety scale. Chi-squar test revealed significant difference between high self-disclosers and low self-disclosers (<.01), high anxious and low anxious (<.01), high self-disclosers and high anxious (<.01), low self-disclosers and low anxious (<.01), and high self-disclosers and low anxious subjects (<.05). But an insignificant difference was obtained between low self-disclosers and high anxious subjects. The result of coefficient of correlation run between self-disclosure scores aud anxiety scores showed that though, tne two were negatively correlated but the coefficient of correlation was found to be insignificant. A more rigorous study involving two variables was suggest to clear the position.

INTRODUCTION

The importance of Self-disclosure was first emphasized by Lewin in 1935. Self-disclosure implies the ways how an individual expresses his desires, aggressions, love and hates to other person. It is an important personality variable and is a must for healthy personality (Sinha, 1973). There are studies which clearly showed the part played by it in the achievement and maintenance of healthy personality (Sinha, 1973 and 1974).

The relationship of self-disclosure and other variables has been studied by different psycholosists. Jourard (1958) studied married/unmarried. Sex differences were studied by Jourard (1958), Himalstein and Lubin (1966), and Paderson and Hallkenph (1969) and Sinha (1976). Sinha (1974) has studied Rural and Urban differences. Cultural differences (Sinha, 1973), and race differences have been studied by many a psychologists as Lewin (1935), Jourard (1958, 1961), Plog (1965), Malikian (1962), and Dimond and Hellkemp (1969).

Some psychologists have explored the correlation of self-disclosure with other personality and social variables in their studies (Lubin, 1965, Pederse and Higbee 1969, Halverson and Shore, 1969).

Anxiety seems to be an important variable related to self-disclosure. It makes a person anxious and careful in doing the things and expressing the ideas. This inference is based on the empirical findings of Lipisitt (quoted by Gaurdy and Spielberger, 1971), who found highly significant negative correlation between comprehensive manifest anxiety scores on the self-concept scale. There was a strong tendency for high anxious children to be self-disparaging. Moreover, self-image of anxious persons have been found to low/negative/rejecting (Sinha and Sinha, 1968; Nikore and Despande; 1967). However Verma (1975) found self-concept and anxiety to be unrealted.

From above studies it seems safe to conclude that anxious person might be careful and try to care the 'safe' ways to express their ideas, thinking and feelings and vise-versa. But the above review of studies shows that the relationship between self disclosure and anxiety has not been explored. Thus there seems to be a cleavage in the studies. The present study is an attempt to fill up the gaps in the studies.

METHOD

Sample—42 adolescent male and female students of Pithoragarh were the subject of this study. Subjects were selected on random basis from B. A. previous. Equal number of male and female students were included.

Tool—Self-disclosure was measured by Sinha's Self-Disclosure Inventory (1973.) This inventory measures the extent of self-discloser in eight areas of self and towards target figures. Simple addition of the self-discloure scores towards target figures or in different areas gives the total magnitude of self-disclosure of the subject.

For measuring anxiety, Sinha's Comprehensive Anxiety Scale (Sinha and Sinha, 1969) was used. This scale consists of 90 items. Total number of scores on 90 items of each subjects was found out. The low scores on this scale reveal the low anxiety and high scores indicate high anxiety in the subject.

RESULT AND DISCUSSION

The sample was divided into four groups, group, 1st consisted of high self-disclosers and 2nd consisted of low self-disclosees. Like wise, group 3rd consisted of high anxious subject and group 4th consisted of low anxious subjects. High and low self-disclosers and anxious subjects were found-out on the basis of norms given in the manuals of the scales and Chi-Square test was used to find out the significant differences between various groups.

TABLE-I

Showing the number of the subject in different groups getting high and low self-disclosure and anxiety scores.

	High	Low
Self-disclosure	5	17
Anxiety	18	19

Low self-disclosure scores=379 & below
High self-disclosure scores=525 & above
Low anxiety score =16 & below
High anxiety score =29 & above

TABLE-II

Showing the significant difference between self-disclosure and anxiety scores.

Level of self-disclosure and anxiety	Value of chi-square	Level of significance
High self-disclosure and low self-disclosure	6.66	.01
High anxious and low anxious subjects	8.05	.01
High self-disclosure and high anxious subjects	14.08	.01
Low self-disclosure and low anxious subjects	8.00	.01
High self-disclosure and low anxious subjects	4.00	.05
Low self-disclosure and high anxious subjects	.10	N.S.

A perusal of the table-II reveals that self-disclosees and low self-disclosees differed significantly with each on the self disclosure scores at .01 level. Likewise high anxious and low anxious subjects also differed significantly with each other on their anxiety scores at -01 level.

Table-II also shows that the students who are high in self-disclosure have also secured significantly higher scores on anxiety scale. The level of significante being .01. It means that the subjects, who disclose themselves before others are anxious persons. In the same way, the subjects who have achieved lower scores on self-disclosure scale have obtained significantly lower scores on anxiety scale also (chi-square$=8.00, <.01$). Thus it suggests that the students who disclose themselves before other to a lesser extent are also low in anxiety. These trends of the findings of the present study lead us to conclude that the high the person in self-disclosure, higher is the possibility for him to be anxious and vice-versa.

A look over table-II reveals also that the chi-square runs between the subjects who have scored high on self-disclosure scale and the subjects who have scored low on anxiety scale is significant (chi-square $4.00 < .05$), but the chi-square between the subjects who have obtained low scores on self-disclosure and subjects who have obtained high scores on anxiety is insignificant (chi-square$=.10 > .05$). These intriguing results of the study need further exploration and a more rigorous study on the subjects.

However, because of the intriguing results of chi-square, product moment cofficient of correlation between the score of self-disclosure and those of anxiety was run. Coefficient of correlation was found to be —.12, which is not significant at ·05 level. Such a trend of the correlation suggests us to conclude that with the increase in self-disclosure there is a decrement in an anxiety, but this relationship is not significant.

Thus, it may be concluded from the findings of the present study that the persons who are high in self-disclosure are also high in anxiety and vice-versa, but the persons who are high in self-disclosure are significantly low in anxiety. However, the persons who are low in self-disclosure are not significantly high in anxiety. The results of coefficient of correlation run between self-disclosure scores and anxiety scores showed that though the two are negatively correlated, but the coefficient of correlation was found to be insignificant. The intriguing results of the study, however, suggest that in order to clear the position, a more rigorous study involving the two variables should be undertaken.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 30-33

Colour Consciousness Among Nursery School Children in Relation To Sex and Income Level

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The purpose of the present study was to find out the colour-consciousness among nursery school children. Sample of thirty parents and thirty children in the age range of 3-5 years equally divided according to sex was taken for the collection of data. Two white and black dolls were shown to the children and they were asked to choose the doll they liked best. The results show that nursery school children and strong preference for white dolls. Male children showed less prejudices than females in the selection in respect of colour consciousness.

INTRODUCTION

Nursery education has been regarded as the crucial period in the development of personality. Research findings (Bloom, 1963 ; Green and Wood, (1963); Bossarn and Boll, 1966) have pointed out that infancy and childhood are crucial periods in the development of inner potential. It is due to this fact that psychologists are interested in nursery education. In India nursery schools are spreading like mushroom growth. These schools enrich the experiences of children and encourage the development of self-confidence, stimulates physical activity and self expression (Kuppuswami, 1974 ; Hebb, 1949). Although the study of infancy occupies an important place yet there is paucity of literature in this field (Survey of Research in Psychology, 1972).

Colour prejudices is very common at the early stage of the children's life. Children select the colour which is favourable to them (Hurlock, 1976) and rejects others which is unfavourable. The present study examines through an experimental investigation the existence of colour consciousness among Indian nursery school children. It also seeks to find out that if there is colour consciousness, then what role the sex, economic status and parents play in it.

THE PURPOSE

The present study was an attempt towards studying the variations in the preferences of nursery school children towards white and black coloured dolls. More specifically the study aimed at finding out :

I. Sex differences in the preferences of white and black colour through two coloured dolls.
II. The effect of income level on the colour consciousness.
III. The reason underlying the preference for particular colour.
IV. The parental attitude towards colour consciousness.

Tools : Following tools were used for the data :

I. Observation.
II. Two white and black coloured dolls.
III. Verbal behaviour check-list.
IV. Attitude scale to assess the parent's attitude towards colour descrimination.

PROCEDURE

The sample of the present study comprising 30 parents (Male) and 30 nursery school children (15 boys—15 girls) in the age group of 3-4 years selected at random from two nursery schools of Chandigarh. To observe the colour consciousness among them, two coloured dolls, white and black were used for collecting data. The children were individually asked to give their preferences and were encouraged to give reasons for their choice. The observation of the children was also made to supplement the information. Parents' attitude towards colour-consciousness was determined through attitude scale which was administered to the parents.

RESULTS

The following tables give the doll preferences of thirty children :

TABLE-I

Dolls Selection of Thirty Children

Sr. No.	Doll	Children's liking for the doll		Total
		Male	Female	
I.	White	8	11	19
II.	Black	7	4	11
Total		15	15	30

The table-II represents the income of the parents and colour consciousness among children.

TABLE-II

Sr. No.	Income of Parents	Children's liking for the doll White	 Black
I.	Rs. 100-50	0 -	1 (100%)
II.	Rs. 501-1000	18 (72%)	7 (28%)
III.	Rs. 1001-1500	3 (75%)	1 (25%)

Table showing means and S. D's of the responses of parents.

TABLE-III

	Yes Meanscore	S. D.	No Meanscore	S. D.	Correlation
Parents' attitude toward colour	8.9	3·24	10·1	3·24	·16*

*Non significant.

DISCUSSION

The results of the study showed that nursery school children had the strong liking for white dolls. Out of thirty children participating in the study, nineteen children preferred to select white doll, while only eleven children preferred to select black doll. The results indicate that nursery school children are colour conscious, they preferred the doll, which was beautiful for them and rejected the doll, which they though was not good looking. When the sex-differences were studied it was found that girls prefer white dolls more often than the boys which depicts that girls are more Prejudiced towards colour than boys. Most interesting things was to know how the children described the reasons for the choice of the particular doll. Some of the children answered, "I will marry a white girl", "it loves me", "it is like my doll". Some children gave the answer, "It beats me", "it shouts at me". Their answers revealed that their choices were more or less depended on their early experiences or their fantancies.

When the colour conciousness was studied in relation to economic status it was observed that children belonging to middle economic status were more colour conscious in comparison to children belonging to lower and upper economic status. The majority of the children of this income group has liking for the white dolls. There was non-significant relationship between colour-consciousness and parents attitude towards colour, which suggested that parents were not differing in their responses regardiag colour consciousness.

CONCLUSIONS AND SUGGESTIONS

I. The results of the present study point out that majority of the young children had liking for white dolls which suggests the presence of colour prejudice among the nursery school children.

II. Sex was found to be an important factor in colour discrimination.

III. Children from upper and lower economic status were found less prejudiced towards colour in comparison to middle class children.

IV. Non-significant relationship was observed between colour consciousness and attitude of parents towards colour.

EDUCATIONAL IMPLICATIONS

After three years, the child goes to school and learn some traits. So it is the duty of the teachers to develop proper conceptions of colour prejudice. While a teacher is in the class room, he is dealing with groups of children coming from different socio-economic background. He may notice the difficulty in adjustment with certain colour on the part of the class. By knowing the colour which the children generally dislike, the teacher can infuse proper colour consciousness.

The teacher can present picture in colours which the children dislikes or show them the work of great painters in those colours, and can make them realize that every colour is beautiful and worth liking. In this why, he can break the taboos about colours.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 34-38

Mirror Drawing Tracing as a Function of Intelligence

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In this study an attempt has been made to investigate the role of intelligence in mirror drawing tracing. Forty eight twelve-year-old male siudents studying in VI class were studied as subject. Intelligance test was administered on each subject and every subject was required to learn mirror drawing of a geometrical pattern.

Significant negative correlation between error and intelligence was observed. Chi-square test also confirmed the same result : signicantly low-error committed subjects showed higher intelligence and similarly, high-error committed subjects gave an evidence of lower intelligence. It was therefore, concluded that intelligence plays a significant role in mirror drawing tracing—high intelligent subject learn mirror drawing with fewer errors.

INTRODUCTION

Intelligence is considered as the most important factor in the learning process. Many of the early psychologists had conceived of intelligence as the ability to learn. Several experiments have illustrated the role of intelligence in different learning situations. For example, Knotts and Miles (1929) in their study of maze learning in blind and sighted children found that the more intelligent children took fewer trials and committed lesser errors in the mastery of maze. Wilson (1931a) concluded that bright nine and twelve-year-old children learned more rapidly than dull children of the same age. The same investigator drew similar conclusion from another study involving the learning of twenty six shorthand characters (1931b). Nelson (1936) found that children with higher intelligence learned a maze earlier than the subject with lower intelligence. Many other investigators have also noted the telling effect of intelligence in learning.

It is apparent from the above conclusions that intelligence plays a highly significant role in learning process. But this factor does not seem to be probed in mirror drawing learning situation. Though sensory-motor learning of the type involved in mirror drawing tracing is not likely to be substantially correlated with intelligence. Yet there are studies which have provided evidence of positive correlation between intelligence and motor learning (Smith *el.at.*, 1930; Bayley, 1935 : Pomeroy, 1938 ; Scott, 1940). This leaves us with a question about the role of inielligence in mirror drawing tracing efficiency. Thus, in the present study an attempt will be made to determine the role of intelligence in mirror drawing tracing. On the basis of the earlier cited studies, it was hypothesized that mirror drawing tracing ability and intelligence will be positively correlated.

METHOD AND PROCEDURE

Subjects—Forty eight twelve-year-old male students of class VIII were studied as subjects.

Materials—Printed copies of two double-lined drawings were used for the present study. Actually the first pattern is indentieal to the other except that the direction of the movement indicated by arrows, is just reverse to that of the first. These drawings were to be traced in mirror drawing apparatus. Time taken on each trial was measured with the help of a stop watch.

Joshi's Humanities Group Test of General Mental Ability (1964) was used to test the intelligence of the subjects.

Experimental Design—Forty eight subjects will be divided into two equal subgroups being equated in respect of intelligence. The first group will be given to trace I pattern (leftward start) while the other II pattern (rightward start). Time taken by each subject on each trial will be recorded.

Procedure—Firstly, all the 48 subjects were given the Test of General Mental Ability in small groups. Then the subjects were divided into two equal subgroups in terms of number as well as intelligence. The test requires individual administration and, therfore, only one subject was tested at a time. The subjects of the first group were given to trace I pattern (leftward start) and of the other group were given to trace II pattern (rightward start). This was done in order to test the laterality effect. The subjects were called one by one and presented with the mirror drawing apparatus and the following instruction were given to them :—

"Look here ! (E showed the drawing pinned at the base of mirror drawing apparatus). You can easily see the drawing reflected on the mirror. You have to trace a line with a pencil between the two lines of the drawing in the direction pointed by the arrow and only by looking on to the reflection of the drawing directly. It is important that you have to trace between the lines of the drawings. Therefore, while drawing the line the pencil should not touch the sides of the drawings. Also, you are not to lift your pencil. If the line drawn by you goes outside the two lines of the drawing, you should come back without lifting the pencil, when you reach the starting point after tracing one round in the figure, it will make one trial. There is no time limit for this work. However, you should do it as fast as you can. The process will be repeated till you draw the line without making any error."

The subjects traced on the drawings pinned on mirror drawing apparatus. They were given as many trials as required to reach the criterion of one errorless tracing. Time required in tracing each trial was recorded.

RESULTS AND DISCUSSIONS

Laterality effect :

Out of forty eight subjects studied in the present experiment, half were required to make their response in the left direction (I pattern) and the other half in the right direction (II pattern). The first major problem before the investigator was to test whether the two lateral subgroups should be treated independently or merged into one group. Since, our present experiment is concerned mainly with the learning process, it was hypothesized that leftward or rightward movements would not affect the mirror drawing efficiency. To achieve this goal the average errors of the two lateral subgroups were to be compared for the significance of their differences. Accordingly *t*-ratio was computed for error scores of the two lateral subgroups. This provided a basis to see whether the group required to make leftward movement had any edge over his rightward counterpart or the *vice-versa*. The obtained result is given in Table-1.

TABLE-1

Summary of the *t* for errors computed for testing the laterality effect.

Comparison Groups	Computed *t*-value	Significance-level
Group I (leftward) vs Group II (rightward)	1.38	not-significant

The obtained *t*-ratio in Table-1 (1.38) is insignificant. It can be safely assumed that comparable lateral subgroups performed at equal level; difference in performance is not due to leftward or rightward movement. It is not, therefore, worth considering any leftward or rightward subgroups. Thus, our hypothesis that leftward or rightward movement would not affect the mirror drawing efficiency seems to be tanable. Accordingly, the two lateral subgroups were merged to form a main group. Thus, only one group was taken into consideration for further analysis.

Response measure

Before proceeding to make further analysis of data one important issue was to decide ; which response measure—time or error—should be taken into account ? Unless there is inverse relationship between the two measures (i.e. if error increase, time decreases and vice versa), it would be more parsimonious to use either of the two. For this purpose, correlation between time and error was appropriate and hence, correlation coefficient was computed. Table 2 provides the obtained results.

TABLE-2

Coefficient of correlation between Time and Error scores.

Computed r value	Level of significance
.61	.01

The obtained correlation is positive (.61) and significant at high level of confidence. It indicates that we can either take time or error for analysing the learning behaviour. Since error is considered the better indication of the learning behaviour hence it was selected as the basis of final analysis.

Interpretation of result on the basis of correlation

Two major types of scores were obtained for each subject : Error score and Intelligence score. These data provided a case for studying the relationship between error and intelligence. The obtained correlation is given in Table-3.

TABLE-3

Coefficient of correlation between Intelligence and Error scores.

Computed *r*-value	Level of significance
—.39	.01

The score on error and intelligence yielded a negative *r*-value (—.39) which is significant at .01 level of confidence. The negative correlation indicates that the higher the intelligence the lesser will be his errors. Similarly lesser the intelligence higher will be his errors. This cofirms that intelligence plays an important role in mirrior drawing tracing—higher intelligence enables the subject to learn mirror drawing with fewer errors.

Interpretation of the results on the basis of chi-square

The another analysis was carried out to varify whether subjects with low and high intelligence would have differential error. For this purpose chi-square was computed. The obtained results are shown in Table-4.

TABLE-4

Number of subjects in Low and High Intelligence and Error sub-groups, and Chi-square value.

Intelligence	Error Low	Error High	Chi-square	Significance level
Low	6	18	12.00	.001
High	18	6		

The difference in number of subjects in low and high intelligence and error subgroups was found significant (chi-square=12.00) at .001 level when tested by chi-square test. It confirms that a considerable number of subjects with low intelligence commit more errors and conversely, greater number of subjects having high intelligence commit less errors. It again establishes that intelligence is a main factor in mirror drawing tracing—greater the intelligences, lesser will be the errors.

CONCLUSION

Thus, from above interpretations of results it is concluded that intelligence plays a significant role in mirror drawing tracing. That is higher intelligence results into better mirror drawing tracing efficiency. Thus, our hypothesis that mirror drawing tracing efficiency and intelligence wil be positively correlated stands in the experimental test.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 1, Page 39-44

An Investigation of Sex Differences in the Development of Formal Operational Thought

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The investigation seeks evidence regarding the confirmation of sex differences in the development of formal operational thought in the Indian settings. High school boys and girls (N=986) belonging to the formal operational period (11 to 15 years) constitute the sample of the study. The test of Piaget Type Tasks (Sandhu, 1980) is used to obtain the measure of formal operational thought. The results of the study confirm the differences in the development of formal operational thought due to sex in favour of boys.

INTRODUCTION

Formal-operational Thought

Formal-operational thought is a highest form of thinking attained by adolescents between 11+to 15+ years of age (Piaget, 1972). It is the final stage of cognitive development of the series-sensorimotor stage (birth to 2 years) pre-operational stage (2 to 7 years) concrete-operational stage (7 to 11 years) and formal-operational stage (11 to 15 years). The thought processes at this stage are well organised to form an equilibrium of the highest order. Formal-operational thought is hypothetico-deductive and it can operate on propositions as well.

Piaget (1970) has described that classical theories of development consider three aspects, i.e., biological maturation, experience with psysical environment and experience with social environment. He has added the fourth consideration, i.e., equilibration. In view of these four aspects responsible for the development of an individual, one is forced to think that girls in our country do not get equal opportunities to that of boys in having the benefits of these aspects. Though Piaget has not mentioned anywhere specifically about the differences based upon sex in the development for formal operational thought and he might have many reasons to justify his stand in his social settings, yet the author have every doubt about their equality, particularly, in Indian settings. Some research workers from the other countries (Weeks, 1973 ; Graybill, 1974, 1975 ; Lawson, 1975, etc.) have also reported significant differences due to sex with respect to the development of formal-operational thought. At the same time there are other research workers (Somerville, 1974 ; Rajput, 1975 ; Shayer and Willam, 1978 ; etc) who have found that the development of formal-operational thought hardly depends upon sex. The present study intends to determine whether boys are in a better position than girls regarding the development of formal operational thought as the various factors resposible for its development are in favour of them. If yes, at what age level the difference between their perormance is most prominent during formal-operational period, i.e., 11 to 15 years. As a bi-product of the main investigation the study also intends to see the trend of growth of formal operational thought among both the sexes during the span of five years, i.e. formal-operational period.

Hypotheses

Keeping in view the objectives of the study, the following hypotheses were proposed to be tested :

1. The performance of boys is significantly better than that of girls on the measure of formal-operational thought at all the five age levels, i.e. 11+, 12+, 13+, 14+ and 15+years.
2. The performance of boys at each age level is significantly better than the performance of the boys belonging to the previous age level.
3. The performance of girls at each age level is significantly better than the performance of the girls belonging to the previous age level.

Test Used

The measure of the formal-operational thought was based on an overall performance of boys and girls on the Test of Piaget Type Tasks (Sandhu, 1980), consisting of ten tasks. The test was found to having test-retest reliability coefficient $r = \cdot 87$. The validity coefficients of the test against the criteria of General Mental Ability, Non-verbal Intelligence and Reasoning Ability scores were reported to be .69, .62 and .56 respectively.

Sample

A sample of 986 students (505 boys and 481 girls) were drawn from the tweleve high schools, situated in rural area of Punjab, taking almost equal number of boys and girls at different age levels. To control the effect of the length of schooling period, only the students at 11+, 12+, 13+, 14+ and 15+years age levels and studying in VI, VII, VIII, IX and X grades respectively were included in the sample. The age-wise breakage of the sample was as follows :

Total Sample

986									
Boys 505					Girls 481				
11+	12+	13+	14+	15+	11+	12+	13+	14+	15—
88	105	116	108	88	80	100	110	104	87

Procedure

The test of Piaget Type Tasks was administered to the students constituting the sample of study in group settings taking 25-30 students at a time. All the responses of the students were scored by awarding one mark to each correct reponse and zero mark to the incorrect response. The total score of an individual was taken as his performance on the measure of formal-operational thought. The mean performance of boys and girls at each age level as well as across the different age levels were compared using one tail t-test technique.

RESULTS

The results regarding the significance of the differences between the mean performance of boys and girls at different age levels have been presented in Table 1 and the results regarding the significance of the differences in the performance of boys as well as girls at each successive age level from that of the previous age level are presented in Tables 2 and 3.

TABLE-1

Results regarding the Significance of differences in the Performance of Boys and Girls on the Measure of Formal-Operational Thought at Five Age Levels.

Age	Sex	N	Mean	S. D.	M^1-M^2 (D)	SED	*t*-Ratio
11+	B	88	44.500	36.253			
	G	80	35.852	34.686	8.648	5.475	1.580
12+	B	105	66.429	43.035			
	G	100	51.620	38.304	14.809	5.684	2.605**
13+	B	116	77.578	44.814			
	G	110	64.875	42.534	12.703	5.810	2.186*
14+	B	108	95.214	43.555			
	G	104	83.791	41.559	11.423	5.846	1.954 *
15+	B	88	102.148	44.551			
		87	86.758	44.065	15.390	6.699	2.297*

**Significant at .01 level. *Significant at .05 level.

TABLE-2

Results Regarding the Significance of Differences in the Performance of Boys at at Each Successive Age Level and the Previous Age Level on the Measure of Formal-Operational Thought

Age Level	N	Mean	S. D.	M^1-M^2 (D)	SED	t-Ratio
11+Boys	88	44.500	36.253	21.929	5.707	3.842**
12+Boys	105	66.429	43.035			
12+Boys	105	66.429	43.035	11.149	5.912	1.886*
13+Boys	116	77.578	44.814			
13+Boys	116	77.578	44.814	17.636	5.906	2.986**
14+Boys	108	55.214	43.555			
14+Boys	108	95.214	43.555	6.934	6.334	1.095
15+Boys	88	102.148	44.551			

**Significant at .01 level. *Significant at .05 level.

TABLE-3

Results regarding the Significance of Differences in the Performance of Girls at each Successive Age Level and the Previous Age Level on the Measure of Formal-operational Thought

Age	Level	N	Mean	S. D.	M^1-M^2 (D)	SED	*t*-Ratio
11+	Girls	80	35.852	34.686	15.768	5.451	2.893**
12+	Girls	100	51.620	38.304			
12+	Girls	100	51.620	38.304	13.255	5.578	2.376*
13+	Girls	110	64.875	42.534			
13+	Girls	110	64.875	42.534	18.916	5.749	3.290**
14+	Girls	104	83.791	41.559			
14+	Girls	104	83.791	41.559	2.967	6.239	.476
15+	Girls	87	26.758	44.065			

**Significant at .01 level. *Significant at .05 level.

DISCUSSION ON RESULTS

The results presented in Table 1 show that the performance of boys is significantly better than the performance of girls on the measure of formal-operational thought at the age levels 12+, 13+, 14+and 15+year. The boys and girls are having no significant differences in their performance at 11+years age level. It is thus quite clear that the differentiation in the development of formal-operationl thought due to sex takes place after the 11 years of age and it continues up to the age of 15 years or may be more. The results of the study are quite in agreement with the findings of Graybill (1974) who has reported that sex differences favouring boys regarding the development of formal thinking begin to appear at the age of 11 years. Thus, the first hypothesis of the study stands tested.

From the results presented in Tables 2 and 3, it becomes quite evident that the performance of both boys and girls at successive age levels is significantly better than their counterparts at the previous age levels, except the boys and girls belonging to the 15+ years age group. It is, thus, an interesting finding that the growth of formal-operation thought in the case of both, boys and girls, shows down by the time they reach the age level of 15 years to such an extent that there has been found no significant difference with respect to the performance of boys and girls at the 14+ years age level. This finding of the study does demand further exploration as to know whether there is a growth of formal-thinking beyond 15 years of age or not.

EDUCATIONAL IMPLICATIONS

There should not be combined sections of classes of boys and girls as they have been found to be operating at different levels with respect to formal-operational thought which may be called a fillip to the academic and other performance of an individual. Secondly, the devices or modes of activities should be planned to expose the students at 15 years of age and there after to a rigorous form of inter-action with the thinking stimulating environment, so that formal-operational thought may be developed further smoothly.

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AGRA PSYCHOLOGICAL RESEARCH CELL
TIWARI KOTHI, BELANGANJ, AGRA-282004 (INDIA)

Asian Journal of Psychology and Education

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 1—5.

PERSONALITY VARIABLES AND MUSICAL PREFERENCES OF MUSICALLY ORIENTED COLLEGE STUDENTS

Dr. Henry H. Reiter and Elizabeth A. Logan

Personality variables have been studied and norms have been determined for many different populations. College students who have shown an interest in music involving more than tuning in a favourite radio station or taking in an occasional rock concert were used as the subject population in this research. A mean rank table was acquired from the subjects' individual musical preferences and statistical manipulations were performed on their test scores. The findings were not statistically significant. A subject population of 30 college students, male and female, was used. Data used were obtained by means of a musical preferences questionnaire, the **Gordon Personal Profile** (1963) *and the* **Study of Values** (*Allport, Vernon, Lindzey, third edition*).

INTRODUCTION

Why study personality variables and musical preferences of musically oriented college students ? The present study purporated to ascertain if music majors and others seriously involved in music are different from other college students.

METHOD

Subjects : The subject population consisted of 30 college students, ranging in age from 18 years to 23. Females comprised 60% of the population. It was not limited to actual music majors. Music education majors accounted for 47% of the populaiion ; 37% were general music majors and the remaining 17% pursued majors in the fields of business administration, language, geology, pre-medicine and English. All, however, had shown an interest in music through their dedicated participation in on-campus musical organizations.

Apparatus : Each subject was provided with a test packet containing three items. The first was a musical preferences questionnaire. The second was the **Study of Values** (Allport, Vernon, Lindzey, third edition), and the third was the **Gordon Personal Profile** (1963). The following gives a brief summary of each :

Study of Values (Allport, *et al*).

1. Theoretical Concerned with the discovery of truth, the empirical and the rational.
2. Economic. Concerned with the practical affairs of running the world.
3. Aesthetic. Looks at life from a viewpoint beauty, form, harmony.
4. Social. Concerned with human relationships, altruistic and humanitarian.
5. Political. Finds power and leadership his goals.
6. Religious. Concerned with his unity with the cosmos and a higher reality.

Gordon Personal Profile (1963) :

1. Ascendancy. Takes an active role ; independent and assertive in relationships with others in day to day living.
2. Responsibility. Reliable and presevering in daily tasks.
3. Emotional stability. Well-adjusted, stable and able to handle the difficulties of everyday life.
4. Sociability. Enjoys being with people and copes well in social relationships.

RESULT

Musical preference questionnaire. Table-1 presents the mean ranks for this section, based on the selections of each subject.

TABLE-1 : Mean Ranks of Musical Types.

Rank	Type	Mean
1	Piano (gen.)[a]	6.53
2	Classical	6.57
3	Vocal (gen.)	6.70
4	Choral (gen.)	6.87
5	Romantic	7.40
6	Orchestral (gen.)	7.45
7	Baroque	8.28
8	Contemporary-popular	9.08
9	Soft Rock	9.44
10	Jazz	10.07

Contd,........

Rank	Type	Mean
11	Folk Rock	10.52
12	Renaissance	10.87
13	Beatles	11.24
14	Folk-popular	11.39
15	Standards (gen.)	12.08
16	Contemporary-serious	12.15
17	50*s* Rock-n-Roll	13.68
18	Soul/Blues	14.24
19	Folk-traditional	14.30
20	Elvis	16.12
21	Country/Western	16 50
22	Bluegrass	16.81
23	Hard Rock	16.85
24	Erotic-Suggestive	17.68

[a] Indicates a general, rather than a specific, type.

Test Score Results. Each of the four *x* values were correlated with each of the six *y* values. The *x* values are the four scores of the *Gordon Personal Profile* (1963) : Ascendancy (A), Responsibility (R), Emotional stability (E), and Sociability (S). The *y* values are the six scores of the *Study of Values* (Allport. *et al*,) : Theoretical (Theo.), Economic (Eco), Aesthetic (Aest.), Social (Soc.), Political (Pol.), ond Religious (Rel.). Table-2 presents correlation coefficients for each pair.

TABLE-2 : Correlation Coefficients of the Test Scores.

x	*y*	*r*	*x*	*y*	*r*
A	Theo.	–.2463	E	Theo.	+.0104
A	Eco.	–.1597	E	Eco.	–.0076
A	Aest.	+.1481	E	Aest.	–.0732
A	Soc.	+.0440	E	Soc.	–.1072
A	Pol.	–.0973	E	Pol.	–.1500
A	Rel.	+.2434	E	Rel.	+.0328
R	Theo.	–.0764	S	Theo.	+.1448
R	Eco.	+.1087	S	Eco.	–.0040
R	Aest.	–.1947	S	Aest	–.0096
R	Soc.	–.0075	S	Soc.	–.0057
R	Pol.	–.0527	S	Pol.	–.0599
R	Rel.	+.1585	S	Rel.	–.0180

Note. None of the correlation coefficients are significant at either the .05 or the .01 level.

Table-3 presents the mean test scores for both tests used. In comparing the sets of means, in most cases the differences appear small. The mean score for Aesthetic is lower than the normative score appearing in the test manual. The mean scores for Theoretical and Religious are comparatively low but not as low as the Aesthetic score.

TABLE-3 : Mean Test Scores.

Test : **Gordon Personal Profile (1963) :**

Experimental Means

N	Group	A	R	E	S
			Means		
12	College Males	21.5	26.3	24.8	22.1
18	College Females	23.6	26.2	23.8	23.9

Published norms

N	Group	A	R	E	S
			Means		
4211	College Men	21.1	23.3	23.7	21.7
1106	College Women	20.9	23.1	21.9	23.4

Test : **Study of Values** (Allport, *et. al.*)

Experimental Means

N	Group	Theo.	Eco.	Aest.
30	College Students	38.52	37.20	52.25
		Soc.	Pol.	Rel.
		37.55	35.90	38.58

Published norms

N	Group	Theo.	Eco.	Aest.
8369	College Students	39.80	39.45	40.29
		Soc.	Pol.	Rel.
		39.34	40.61	40.51

DISCUSSION

The group of students that participated in the present study appeared to be more aesthetic than college students as a whole, and slightly less theoretical and religious.

Dr. Reiter
Psych. 24

Date
Social Security No.
Age
Sex
Major Area of Study

Please indicate your musical preferences by ranking the following categories of music. Use numbers to indicate rank, 1 next to the category you most prefer, 2 for your second preference and so on. If you are unfamiliar with any category and prefer not to rank it, place *U* in front of that category,

—Hard Rock
—Soft Rock
—Folk Rock
—Country/Western
—Bluegrass
—Jazz
—Soul/Blues
—Fifties Rock & Roll
—Standards (gen)
—Orchestral Music (gen)
—Choral Music (gen)
—Vocal Music (gen)
—Piano Music (gen)

—Classical
—Baroque
—Romantic
—Contemp.—Serious
—Contemp.—Popular
—Elvis Presley
—The Beatles
—Erotic, Suggestive Music
—Renaissance
—Folk-Traditional
—Folk-Contemp., Pop.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 6—15.

ATTITUDES AND REALITY : SEX TYPED EXPECTANCIES A CROSS CULTURAL APPROACH

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INTRODUCTION

Research on parental attitudes "........provide (s) information about ways in which parents perceive, organize and understand both their infants and their roles as parents" (Parke, 1979, p. 554). Their are several topics which have been of interest in the past :

1. acceptance vs. rejection of the pregnancy
2. planned or unplanned pregnancy
3. feelings of dependency during pregnancy
4. acceptance of the fetus as an independent creature (first reaction towards fetal movements)
5. fear of birth
6. fear of hurting the baby
7. psychosmatic disturbances during pregnancy
8. acceptance vs. rejection of breast feeding
9. acceptance vs. rejection of sexuality.
10. identification with the female role
    —identification with the mother
    —motherese
    —identification with the father
    —acceptance vs. rejection of the biological re-productionary capacity
    —acceptance vs. rejection of traditional sex role expectancies
    —active care
    —femininity vs. masculinity
11. attitude towards the husband or partner relationship
12. general parental attitudes.

(this summary is according to Lukesch & Lukesch, 1976)

One topic of parental interest during pregnancy is obviously neglected, *i.e.* the sex of the expected child. "....... long before their child's birth parents start to discuss their preference for the sex of the unborn child and start providing names as a function of the sex of the child". (Lewis, 1972, p. 231).

Sex preferences seem to be embedded in a system of sex role specific beliefs which vary along a value dimension. Most people seem to prefer a boy as a first child (Markie & Nam, 1973 ; Etzioni, 1968). The conception of a second child is, on the average, three months earlier, if the first child is a girl (Westhoff, Potty, Sage & Mishler, 1961).

An early sex diagnosis seems to be important in this respect. Although amniosynthesis allows an exact prediction, it is only applicated on medical indication.

In the wisdom of the people exists a network of beliefs which allow speculations about the sex of the expected child. The pregnancy related signs in general can be summarized according to Bookmiller & Bowen (1967) into three groups,

(a) *presumptive signs*, which include cessation of menses, morning sickness, changes in the breast, increased frequency of urination and quickening (fetal movements) ; most of these signs do not occur very early in pregnancy ;

(b) *probable signs*, which include enlargement of the abdomen, softening of the uterus at its juncture with the cervix, softening of the cervix and development of a bluish coloration ;

(c) *positive signs*, which include fetal heart beats, feeling fetal movements or medical pregnancy test.

Similar beliefs of predict the sec of the expected child are recorded in the US (Sontag, Steele & Lewis, 1969) and Costa Rica (Castro & Chang, 1979).

An empirical validation does not exist. The present study is aimed to do this in a cross cultural approach in order to find out whether sex related expectancies are human universals of culture specific.

METHOD

Procedure : Pregnant women in the last trimenon of pregnancy in the FRG and Costa Rica+ were asked to participate in a cross-cultural study on attitudes and experiences concerning pregnancy. Women in Costa Rica were contacted by a social worker in a great maternity ward. Since sampling in german institutions was very difficult,

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+ We appreciate very much the help of Dr. G. Miranda without whom the present study would not have been conducted.

individual women in nursing schools were asked by one of us (G. G.) to participate in the study. The participating women had to be german or Costa Rican residents. There were no other selection criteria.

The women were then informed that the study consists of three parts :

1. a first questionnaire was applicated during the last trimenon of pregnancy ;
2. a second questionnaire was applicated two days after delivery ;
3. a third questionnaire was applicated when the expected baby is three months of age.

Description of the samples : The following table shows the distribution of age and parity of the participating women. Most of the women in both countries belong to the middle class. This effect is due to the voluntary participation. The multiparae women in the FRG have 17 children in all (10 girls and 7 boys) with a mean number of 1, 35. The multiparae women in Costa Rica have 64 children in all (34 boys and 30 girls) with a mean of 1, 93.

TABLE-1. Distribution of age and parity.

age	group	parity	FRG	Cost Rica
I	20	primiparae	3	7
		multiparae	1	4
II	21—25	primiparae	12	4
		multiparae	2	11
III	26—30	primiparae	12	4
		multiparae	4	5
IV	31 - 35	primiparae	3	8
		multiparae	4	8
V	36—40	primiparae	2	0
		multiparae	2	3
VI	40	primiparae	0	0
		multiparae	0	2

In the FRG participated 45 women (32 primiparae and 13 multiparae) in the study, in Costa Rica 49 women (16 primiparae and 33 multiparae).

It can clearly be seen that Costa Rican women get pregnant earlier than german ones and bear more children. The questionnaire which was administered during pregnancy covered 9 topics (the two other questionnaires are not mentioned here since they are not included in this study), with 74 questions: 1. *general information* (age, civil status, profession, educational level, number of children and week of pregnancy). 2. *family planning and related beliefs* (ideal age to be pregnant, attitude towards children, number and sex-planning for children), 3. *pregnancy related questions* (planned or unplanned pregnancy, reasons, value of pregnancy), 4. *questions concerning the preparation of the delivery* (medical checkups, nursing scholl), 5. *questions concerning the sex of the expected child* (attitudes towards the predictability of the sex, wanted sex), 6. *pregnancy signs and symptoms* (physical and psychic signs, complications), 7. *questions concerning delivery ana nursing* (fear or birth, preparations for feeding, attitudes towards breast feeding); *preparation for the child* (planned name, preparation for clothes and toys), 9. *parental attitudes concerning skiels and capacities of the child*) knowledge about developmental processes).

In this study we are restricted to the sex-prediction and beliefs about sex prediction.

RESULTS

Data analysis only concentrates on women whose children were born and live.

(a) **Sex Preferences :**

In both countries we find a great deal of women who have marked preferences for one sex, being even higher in the FRG and especially in multiparae mothers.

TABLE-2 : Sex preferences in the FRG and Costa Rica.

	FRG %	Costa Rica %
Primiparae+	43, 8	18, 8
Multidarae++	81, 8	56, 3
Total	62, 8	37, 8

+ number of primiparae : FRG 16, Costa Rica 16

++ number of multiparae : FRG 11, Costa Rica 32

The high percentage of german multiparae mothers with a marked sex preferences may be due to the fact that german families only plan for 2, 2 children on the average (2, 3 in our sample, whereas most of the Costa Rican mothers want to have more children, 2, 9 in our sample and according to earlier data from Castro and Chang (1979) between 2 and 4 children.

The distribution of sex in these differences in shown in tables-3 (a) and (b).

TABLE-3 (a). Sex of sex preferences.

	FRG		Costa Rica	
	primi	multi	primi	multi
	no.=7	no.=9	no.=3	no.=18
preferred sex	%	%	%	%
♀	85, 7	44, 4	66, 6	55, 6
♂	14, 3	55, 6	33, 3	44, 4

TABLE-3 (b). Sex preferences of the total sample.

	Primiparae				Multiparae			
		♀	♂	?		♀	♂	?
	No	%	%	%	No	%	%	%
FRG	17	5, 9	35, 3	58, 8	11	45, 5	36, 4	18,2
Costa Rica	16	6, 3	12, 5	81, 3	32	28, 1	31, 3	40, 6

Although the percentages are critical due to the small number of subjects, it is obvious that german primiparae mothers mostly prefer a boy and least a girl ; in german multiparae mothers the distribution is nearly equivalent; Costa Rican mothers express equivalent but less pronounced preferences. Castro and Chang (1979) report similar data. This result confirms earlier data for boys being preferred as a first child. Multiparae mothers mostly prefer the sex opposite to that of the born child (ren).

(b) **Popular beliefs :**

Most of the women in both countries whether primi-or multiparae know popular beliefs to recognize the sex of a child based on pregnancy symptoms ·45 (from 48) Costa Rican expectant mothers give 48 statements, 20 (from 27) german expectant mothers give 28 statements. These statements can be categorized into 5 categories.

TABLE-4 : Pregnancy signs to recognize the sex of an expected child.

	FRG	Costa Rica
	no.=28+	no.=48+
	%	%
Shape of the abdomen	28, 6	89, 6
Physical condition	64, 3	33, 3
Physical appearance	64, 3	12, 5
Fetal movements	7, 1	16, 7
Others		31, 3

+ number of statements, multiple statements possible.

As can be seen in table-4, the values of the categories are different in the two countries. Most of the german mothers know signs concerning physical conditions and appearance, whereas, whereas most of the Costa Rican mothers quote the shape of the abdomen. The category 'others' covers pregnancy 'tests' with needles and knife and spoon which seem to be less known in the FRG. The content and meaning of the signs is given in the following table :

TABLE-5 : Distribution of sex related pregnancy signs.

			FRG			Costa Rica		
			no=45+			no=88+		
			×	×	?	×	×	?
			%	%	%	%	%	%
		shape of the abdomen			2, 2			35, 2
		pointed	11, 1	2, 2		6, 8		
		round		2, 2			6, 8	
State of health and well being	positive	good health condition	2, 2					
		pregnancy without problems	2, 2					
		good mood	2, 2			1, 1		
	negative	indisposition	4, 4	6, 6	4, 4			7, 9
		heartburn	2, 2		2, 2			
		crying		2, 2				1, 1
		fatigue						3, 4
		pains						2, 3
	neutral	greediness for sour	2, 2	2, 2				
		sweet		2, 2				
		fruits		2, 2				
Appearance	positive	general			6, 6			1, 1
		blooming	15, 6	2, 2				
		red cheeks	2, 2					
	negative	spotted face			4, 4			
		unclean skin	2, 2	2, 2				
		ugly		2, 2				
		bread growing	2, 2					
		fetal movements	2, 2	2, 2				5, 7
		"tests"						5, 7
		others						6, 8

+ Number of statements.

Table-5 shows that the content of these signs is nearly equivalent in both countries. Most of the german women (22 from 27) and nearly half of the Costa Rican mothers (22 from 48) describes positive or negative physical and psychic symptoms which they ascribed to the fact that they are pregnant. Table-6 shows the distribution for physical and psychic signs.

TABLE-6 : Pregnancy signs.

	FRG		Costa Rica	
	no.=22		no. 23	
	phys. signs	psych. signs	phys. signs	psych. signs
	%	%	%	%
Primiparae	39, 1	26, 1	18, 2	50, 0
Multiparae	45, 5	31, 8	26, 1	34, 3

German primiparae mothers show the least psychic changes during pregnancy, Costa Rican primiparae mothers the most, but the least physical signs. It must however taken into consideration that nearly half of the Costa Rican sample does not report any changes at all.

In an next step we evaluated the pregnancy signs into positive and negative ones. Examples for *positive physical signs* are tender skin, better growing fingernails, *positive psychic signs* are proud of being pregnant, emotionally balanced ; *negative physical signs* are : pimples, varicose veins and *negative psychic signs* are unstable mood, tears etc.

After delivery we compared the sex of the child with the reported pregnancy changes.

TABLE-7 : Pregnancy signs in relation to the sex of the newborn.

	FRG								Costa Rica							
	No=55+								No=37+							
	Primiparae				Multiparae				Primiparae				Multiparae			
	phys		psych		phys		psych		phys		psych		phys		psych	
	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
♂	3,6	9,1	3,6	7,3	—	12,7	5,5	14,5	—	8,1	2,7	18,9	—	2,7	2,7	10,8
♀	4,8	5,5	—	10,9	—	14,5	5,5	3,6	—	5,4	10,8	10,8	—	13,5	--	10,8

+ number of statements
— multiple statements possible

	FRG		Costa Rica	
	+	−	+	−
♂	12.7	43.6	5.4	40.5
♀	7.3	34.5	10.8	51.4

In any case the negative pregnancy signs are much more numerous than the positive ones, irrespective of the sex of the child. This fact contradicts the popular beliefs which assigned positive changes to the pregnancy of a boys and negative ones only to the pregnancy of a girl.

In order to find out whether other subjective signs could better predict the sex of the child, we made the following comparisons.

TABLE 8 : Sex predictions and reality.

	FRG		Costa Rica	
	primipare	multiparae	primiparae	multiparae
	no=16	no=11	no=16	no=32
	%	%	%	%
Mothers preferred sex and reality	31, 3	27, 3	12, 5	12, 5
Mothers prediction and reality	31, 3	45, 5	43, 8	34, 3
Fathers prediction and reality	31, 3	9, 1	31, 3	21, 9
Friends prediction and reality	31, 3	36, 4	18, 8	40, 6

Table-8 shows that wish and reality in german mothers corresponds more often than in Costa Rican mothers. The most realistic estimate about the sex of the child indicate german multiparae mothers, followed by Costa Rican primiparaes. Fathers predictions in german and Costa Rican families without a child are exactly the same and much more higher than those of fathers who already have children.

Friends predictions and higher for multiparae mothers than for primiparae in both countries and are comparable to those of the multiparae mothers.

DISCUSSION

There are no separate cultural stereotypes and beliefs concerning the topics under study, i.e. no qualitative differences in the knowledge of sex predictive signs during pregnancy. The quantitative amounts however differ markedly. The most well known signs in Costa Rica is the shape of the abdomen, whereas in the FRG physical conditions and appearance are mostly known. Very few women believe in these signs in both countries.

Pregnancy signs are reported from most of the german expectant mothers, but only half of the Costa Rican mothers. The changes can be categorized into positive and negative psychic and physical symptoms. In both countries negative changes prevail positive ones irrespective of the sex of the child. Experience with former pregnancies seems to be a more valid signs in that the multiparae mothers give the best predictions. Although friends of multiparae mothers who share at least partiy their experience make good predictions. According to the reports of the tested women sex of the expected child seems not to be central in their beliefs and attitudes towards the newborn child. From 45 german women 34 know possible decisive means concerning the determination of sex (mostly in relatton to the time of conception) bot only two followed these advices. Most women want to be surprised by the sex of the child.

Following the women for a short while with their experiences and attitudes towards their born babies will give us further information about this topic.

* * *

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EXPERIMENTAL PSYCHOLOGY : A DYNAMIC APPROACH

By

Dr. Govind Tiwari and Dr. Roma Pal

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VINOD PUSTAK MANDIR, AGRA-282002

Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 16—28.

SOME SOCIAL PSYCHOLOGICAL DIMENSION OF BLIND STUDENT

Azizul Quadar

Department of Psychology, A. M. U. Aligarh

The present investigation was planned to study the some social-psychological dimensions of blind students. 40 blind students and their teachers (10) were interviewed. Responses were noted down and observation of the subject's behaviour was also made at the end of the interview. It was manifest by the blind students that they themselves feel ignoring by the society.

INTRODUCTION

The social organisation of comunity is related to the level of technological development. An industrial society tends to evolve patterns of behaviour, a systems of values and variety of institutions which would best serve the needs of its members. But in the process of present day industriallization man has deviated from many of his tradition and values. Modern technological civilization has reduced striving man to more job seeker, dissociated from values and aspirations, tasks and obligations that formerly connected the bond of society and provided opportunities for self-discipline, self-development and healthy development of body and mind.

To much of materialism has bereft man of his balanced personality development. His desires and needs as well as his aspirations are blocked every moment and they in turn, give birth to various frustration. Modern man has become a chronic victim of conflicts, contradictions and frustrations. The profound and incapable discards between his normal, personal, emotional demands and social pressures and expectancies now cover all dimension of human adjustment and wish fulfilment. Various sociologists, Psychologists, Clinicians, Psychoanalysts have described the present trend of modern civilization. Summing up the views of various psychoanalysts on this point Mukerjee (1964) has said that "the loss of intimacy, love and sharing in love and marriage as the method of safe-guarding human self-esteem, reassuring against anxiety contributed towards living in and for an exceedingly exaggerated and privileged appropriate for the normal individual...... (page 82)". Because of the present trend of civilization not only mature men and women and subjected to mental imbalance, even children are also subjected to such abnormalities.

The present process of cultural tuitior of the student is worked due to chronic anxiety, fear and guilts feelings. For the frustrated and resistant student the parents become the symbols of right, coercion and aggression and the entire social universe which he gradually enters becomes fearful, hostile and aggressive. The loss of mutual love, affections and tenderness of maladjusted parents also leads to its projection in children. The denial or inadequacy of normal nursing, mothering, codding by mothers also irresponsible damage the mental growth of blind students in particular.

The physically blind students have remained until the last decade the most ignored and least regarded of all students in our country. Perhaps no other group of suffering human being has remained ignored for so long. Since the time man began to understand that physically blind student suffered from some what different sorts of handicaps, very little progress has been made in bringing out the distinction.

PROBLEM

Like any other country India also faces the problem of physically handicapped persons. Among the various kinds of physical handicaps blindness presents on appelling problem. It is desirable to draw the attention of the government and public alike to this problem. Blindness can not be the subject matter of a single study of either medical men, social case worker, psychologist or sociologist. As a comprehensive study of the blind persons in all its bearings may be our ambitions, it was considered worth while to study some of the social psychological dimension of these persons. Briefly speaking the problem of the present investigation is investigating some social-psychological dimensions of blind student studying in AHMADIT BLIND HIGH SCHOOL, A. M. U. Aligarh.

METHODS OF INVESTIGATION

Looking at the purpose of the present study it was considered necessary to plan a research design that would help us to reflect the social-psychological factor associated with blind persons. The method that is proposed to be used in present study would cover (a) a sampling design and (b) technique for data collection. Let the present details concerning these techniques.

Sampling design : Looking at the limitation of time at the disposal of the investigation it was considered feasible to approach the residential students of Ahmedia Blind High School A. M. U. Aligarh. Mere out of a total of 110 blind students, 40 students were randomly selected for the present study.

Technique of data Collection Various technique research have been adopted by the psychologists but in this study the technique of interview has been adopted with a view to ascertaining the social-psychological factors underlying blind students.

Interview Method and Its Rationals :

Interview is face to face conversation. It is favoured by most of the investigators in the field of social-psychological investigation. Woodworth said that "Interview is the perception controlling the interpretation of the facts." There are some sources of error in the interview procedures. Some of the problems are failure to define terms on the part of interviewer, brief and generalized habits of interviewer. Nervourness and habits of resistance are also sources of errors.

Bingham and Moore (1924) described the interview as "as a conversation with a purpose". This description is still relevant, but it is extremly broad definition. The purposes for which interviews are conducted one many and varied such as theraputic change as in the psychiatric interview etc. "The interview technique is highly potent tool of social-psychological research especially in affective and motivational areas where questionnaire and observational measures are not so effective". By means of interview one can delue deeper into provides an opportunity for observation under controlled condition. Not only does it succeeded in eliciting the subjects responses to questions, but it also provides the opportunity to observe the manner in which the respondent handles the questions and tackles the interview situation.

The distinction is sometimes made between "structured" and "unstructured" interviews. The dimension is not identical with the standardized and unstandardized dimension, but it is similar. Unstructured interview is, in general, done without a standard list of questions. It has the further characteristic that the questions are as "open" as possible and offer a minimum of guidance to the respondents.

In the standardized interview, the questions, their sequence, and their wordings are fixed. The interviewer may be allowed some liberty in asking question. This liberty is specified in advance. Standardized prepared in advance to obtain information pertinent to the research problem.

A possible way to collect information regarding socio-economic and developmental background of blind children was to have personal interviews with the teachers. From the point of view of accuracy this method appears to be the most desirable.

With the help of the interview schedule, prepared after due scrutiny and precaution, relevant information from teachers and blinds students was obtained. In preparing the interview schedule care was taken to see that the terms included in it are most efficient in securing the requisite information and are quite intelligible to respondents.

For the present study, the techniques of standardized interview has been adapted as suggested by Maccoby and Maccoby (1964). It has a number of merits. According to them such types of interview (a) incorporate a basic principle of measurement : that of making information comparable from student to student (b) they are more reliable and (c) they minimize errors of question wordings.

Here, it must be clearly stated that since the interview method is the probing tool of the diagnostic variety it was adopted in the present study. Further, it was employed as it would permit us to observe the behaviour of the student, his inflection and gesture which would throw light on their reaction paterns.

Constraction of Interview Schedules :

Interview schedules were developed for ascertaining various socio-economic and psychological factors, environmental variables and social competence of blind students. The primary objective of interview methodology is that it must translate the research objective into specific questions, the answers which may provide the data necessary of test the hypothesis or explore the area set by the research objectives. In order to achieve this purpose each question must convey to the respondent the ideas required by the research objectives and each question must obtain a response which can be analysed so that the results fulfil the research objective. The questions included in a schedule must perform these two function of the interview schedule is to exist the interviewer in motivating the respondent to communicate the required information.

In preparing the schedules it was ensured that the questions chose were quite intelligible, stimulating and helpful in eliciting relevant information. Questions which involved subjective ratings were avoided.

Interview schedules consisting mainly of open-ended questions were prepared for blind students and teachers. Some close ended questions were also included in the schedules.

For blind students the interview schedule covers the following areas ;

1. General information.
2. Home atmosphere of the student.
3. Interest in school and student.
4. Social-adjustment of the blind.

For teachers it convers the following areas :

1. General School atmosphere.
2. Interest and habits.
3. Behavioural adjustment of the child.
4. Intellectual level of the student.
5. Emotional adjustment of the student.
6. Socio-economic status of the parents (According to the School records).

The above basic orientations provided the guidelines on the basic of which that interview schedule were prepared.

Pre-testing : An analysis of pre-test interviews in relation to the objective to be achieved is essential, no matter how astute the interviewer has been in the wordings of the questions and in developing the proper sequence and design of items. A pre-test is also necessary to be able to know to what extent the interview meets the needs of the respondents and is redistic in its demands on them. Do the questions need unnecessary explanation to be comprehendible ? Do they need to be rewarded ? The answer to all these questions may well be obtained by noting the reactions of the respondents to the interview schedule in the pre-test stage.

Interview Schedule for Student :

In the original draft of the interview schedule for students there was 17 questions. These questions covered various areas. With the help of the schedule thus prepared 20 students were interviewed to ascertain feasibility of the schedule. Certain modification were made in the light of the findings of tryout.

Finally arrived at seven questions which were found to be relevant to the problem and the responses to the same also showed normal distribution.

Interview Schedule for Teacher : In the original schedule for teachers there were 8 questions. These questions were administered on 5 teachers.

The original draft of the schedule was modified in the response patterns of the first try out. The final draft of the interview schedule for teachers consists of five questions. Only those questions were included in the interview schedule which could elicit information about the child's mental growth habits, likes and dislikes and interests.

On the basis of two interview schedules that were prepared for probing the children and teachers, we went out to field to collect the relevant data.

PROCEDURE FOR COLLECTION OF DATA

While interviewing, an attempt was made to secure a permissive atmosphere marked by flexibility and spontancity. The interviewer refrained from expressing his own opinions and beliefs. He was only to help the respondent to proceed in his way and at his own pace. Some encouragment was given by often repeating the lost sentence of the respondent or by showing sympathy with his views. There was no compulsion on the interviewer to reveal any thing which he did not wish to.

After getting the subject's seated comfortably and talking on some topics of general interests for a while the subject was asked to respond to each question put to him. Responses were noted down in the space provided. Whenever a question was not fully comprehended by the subject it was explained to him in simple language. While noting down the responses close observation of the subjects behaviour was also made and notes taken at the end of the interview. In this way 40 blind students and 10 teachers were interviewed.

RESULTS AND DISCUSSION

Undoubtedly interview technique has assumed great significance in the history of social-psychological research as a powerful instrument for securing information, speciafically in the affective, motivational and social areas. In the present investigation information regarding social-psychological and economic status of blind student was obtained on the basis of interview of blind students and teachers. The method of content analysis was employed for analysing the interview records in the care of open ended questions.

RATIONALE OF CONTENT ANALYSIS

As "coding is indispensable for content analysis" it become necessary to develop on appropriate coding system for the analysis of the verbatim records obtained on the basis of interview. A systematic technique for coding the content of interview is essential as it facilitates the "translation" from the qualitative complexity of the total content to the quantitative simplicity of counting........ Them as" (1952 p. 326). In intvities or impressionistics analysis may render a researcher open to the charge of bias or not clearly understanding the situation. On the other hand the development of a set of clear coding operations make it possible to demonstrate a number of facts which do not depend on the researcher's personality or insight alone but which can be tested by any trained social scientist.

TREATMENT OF THE INTERVIEW DATA

An attempt is made to present the results of content analysis under several headings as envisaged by the interview schedule, while drawing inferences.

THE RESULT OF CONTENT ANALYSIS OF INTERVIEW RECORDS OF STUDENT

The interview records divided into two group :

(1) Personal variables concerning blind students.

(2) Other variables concerning blind students.

Personal Variables :

Sex—Table-1.1 concerning blind student indicates 100 percent of the subjects (blind students) are male students.

TABLE-1.1

Category	Male	Female	Total
f	40	0	40
%	100%	0	100%

Table-1.1 indicates that whole population of this is male subject.

TABLE-1 2

Category	10—11	12—14	16—17	Total
f	10	12	18	40
%	25%	30%	45%	

Age: Table-1.2 indicates that an appreciable percentage (45%) of the blind student belong to age group 16-17 years. Second highest number of such students (30%) belong to age level of 13-14 years. Only 25% of the blind students come from age group 10-11 years. Thus, it is evident that as many as 70 percent of student in present study are between the age group of 13-17 years.

TABLE-1.3

Category	VIII Class	IX Class	X Class	Total
f	13	11	16	40
%	32.5%	27.5%	40%	100%

Class (in which studying) :—Table 1.3 indicates that an appreciable percentage of blind students (40%) belong to class X, and second highest percentage of students (32.5%) are studying in class IX. Thus, it is evident that as many as 67.5% of students in the present study are studying in class IX and X

TABLE-1 4

Category	Illiterate	Below Matriculate	Matriculate	Inter-mediate	Graduate	Post Graduate
f	10	5	7	8	5	5
%	25%	12.5%	17.5%	20%	12.5%	12.5%

Father's Education :—Table 1-4 indicates that the mojority of the fathers of blind students (75%) are literate. Only (25%) of them are found to be illiterate. 25% of the fathers of the subjects studied are graduate and post-graduate, 20% of them have passed intermediate examination and 17.5% are matriculates. 12.5% fathers are below matriculation. The data reveal that most of the fathers of blind students are literate.

TABLE-1·5

Category	Labourer	Peon	Teacher	Business	Total
f	10	5	15	10	40
%	25%	12.5%	37.5%	25%	100%

Father's Vocation : Table 1.5 indicates that quite an appreciable number of father (37·5%) of blind students are working as teachers. 25% of the father of blind students are labourers. Only 25% of the fathers are engaged in business and 25·5% of them work as peon. On the whole, the data reveal that the most of the fathers of blind students live in adverse financial condition. This fact may be responsible for malnutrition which may be associated with blindness.

TABLE-1.6

Category	Illiterate	High School	Intermediate	Total
f	21	9	10	40
%	52·5%	22·5%	25%	100%

Mother's Education :—Table-1.6 concerning mothers of blind student indicates that a majority of mother (52·5%) are illiterate. 47·5% mothers of blind are reported to be high school and 25% mothers are reported to have passed intermediate examination. Low standard of education on the part of mothers may be responsible for poor dieting and upbringing.

TABLE 1·7

Category	Teacher (Primary)	Without Job	Maid Servant	Total
f	11	13	16	40
%	27.5%	32.5%	40%	100%

Mother's Vocation :—Table 1.7 shows that 40% of the mothers of blind students are working as maid servants and 25.5% are reported as teachers in primary school. Only 32.5% are jobless. Thus, it is clear that their economic position is not satisfactory.

TABLE-1.8

Category	Below Rs. 300	Middle Rs. 300 to 600	High Rs. 700-9000	Total
f	19	11	10	40
%	47.5%	27.5%	25%	100%

Family Income :— Table 1.8 indicates that 47.5% of blind students hail from families whose income is below Rs. 300. 27.5% respondents reported their income falls between Rs. 300 to 600 and 25% respondents reported their income to be Rs. 700 and above. It is, thus, evident that a majority of parents of the blind students (75%) hail from families shose income is arround Rs 300-600.

TABLE-2.1 : Frequencies and Percentages showing the attitudes of the Parents towards the Child.

Category	Favourably	Unfavourably	Indifferently	Total
f	26	4	10	40
%	65%	10%	25%	100%

Other variable concerning blind students :—It is evident from table-2.1 concerning the blind students that the majority of parents like such children and 25% parents are found to be indifferent to blind children. Only 10% parrnts reflect unfavourable attitude towards their blind children. Though majority of parents are found to show favourable attitudes towards their blind children yet a sizeable percentage of parents (35%) are either indifferent or do not like blind children.

TABLE-2.2. Frequencies and percentage showing that children's parents often quarrel among themselves.

Category	Yes	No	Total
f	25	15	40
%	62·5%	37·5%	100%

Table 2.2 indicates that a majority of parents of blind students (62.5%) are found to quarrel among themselves. Only 37.5% blind student reported that their parents do not quarrel among themselves. Thus, we find that in most cases parents of blind students quarrel among themselves. This fact is indicative of broken home and incogenial home atmosphere.

TABLE-2.3

Frequencies and percentage showing the liking of blind children towards him.

Category	Yes	No	Total
f	29	11	40
%	72.5%	27.5%	100%

It is evident from table 2.3 that 72.5% blind students like to stay at home and only 27.5% of such students do not like to stay at home. Thus, the fact that 2 5% blind students do not like to stay at home reflects their attitude of disgust with home atmosphere.

TABLE-2.4 : Frequencies and percentage showing the feeling of blind students towards school or other places.

Category	School	Somewhere else	Total
f	15	25	40
%	37·5%	62·5%	100%

Table-2.4 indicates that majority of blind students (62·5% prefer to stay at school. Only 37·5% of such students reported that they prefer to say away from school. It is thus, found than an appreciable number of blind students do not show alking for studies and school.

TABLE-2.5 : Frequencies and percentage showing the interest of blind students towards their friends.

Category	Yes	No	Total
f	15	35	40
%	12.5%	87 %	100 %

It is obvious from table-2.5 that an over-whelming majority of blind students (87·5%) are not interested in their studies. Only 12·5% of such students express their interest in studies.

TABLE-2.6 : Frequencies and percentage showing the liking the children in playing with their friends.

Category	Yes	No	Total
f	22	18	40
%	55%	45%	100%

Table-2.6 shows that majority of blind students (55%) like to play with friends, while only 45% reported their dislike in the matter.

TABLE-2.7 : Frequencies and percentnge showing in friends liking in playing with other students.

Category	Yes	No	Total
f	32	8	40
%	80%	20%	100%

Table-2.7 indicates that an over-whelming majority of friends of blind students like to play with them. Only 20 % of blinp students report that their friends do not prefer to play with them.

The Result of Content Analysis of Interview Records of Teachers.

There are five interview records analysising below :

TABLE-3.1 : Frequencies and percentage showing the opinion of the teachers regarding the progress of blind students.

Category	Yes	No	Total
f	32	8	40
%	80%	20%	100%

Table 3.1 indicates certain valuable feature concerning the progress in studies of blind students. The interview data reveal that in the view of 80% teachers, blind students show satisfactory progress at the school. Only 20% teachers reported that such students do not show satisfactory progress in their studies. Thus, we find that large majority of blind students show progress in their studies. This may be reflected to their effort to compensate for their physical handicap.

TABLE-3.2 : Frequencies and percentage showing teachers assessment of the student's in studies.

Category	Yes	No	Total
f	30	10	40
%	75%	25%	100%

Table-3.2 shows that 75% teachers of blind students report that they show interest in their studies. Only 25% teachers of such students report that they do not show interest in their studies. This finding corrobarates the above result.

TABLE-3.3 : Frequencies and percentage showing interest of students in extra curricular activities.

Category	Sits alone	Quarrels	Plays	Total
f	13	20	7	40
%	32·5%	50%	17·5%	100%

It is evident from table-3.3 that 50% tecachers of blind students report that such students quarrel among themselves or with their friends in extra class hours. 32·5 × of blind students prefer sitting alone. Only 17·5% teachers reported that such student spend their extra period in playing.

TABLE-3.4 : Frequencies and percentage showing the interests of students in games.

Category	Yes	No	Total
f	33	7	40
%	82·5%	17·5%	100%

Table 3.4 indicates that 82·5% teachers report that blind students take interest in games and in 17·5% cases such students do not exhibit interest in games. Thus, we find that a majority of blind students show interest in games.

TABLE-3.5 : **Frequencies and percentage showing that the students are regular in attending classes.**

Category	Yes	No	Total
f	30	10	40
%	75%	25%	100%

The interview data obtained from teachers in regard to attendance at school (Table 3.5) show that 75% of their report that these students are regular in attending classes. Only 25% teachers are found to report that blind students are irregular in attending classes. Thus, it is evident that large majority of blind students are particular in attending their classes.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 29–36.

MATHEMATICS TEACHING FOR THE SLOW LEARNERS

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INTRODUCTION

On account of rapid progress in the fields of mathematics and science, it is found absolutely necessary that the present generation should learn the subject of mathematics thoroughly. The number of slow learners in mathematics has become a problem for the educationalists. It is therefore, most important for them to find out suitable remedy at this stage, to reduce the number of slow learne in the said subject to a minimumr.

It has been observed that children possess different types of abilities. More importantance is given to their physical and mental abilities. It has been observed that no two children have the same abilities and the abilities vary from Child to Child. The impartation of education basically depends upon the mental ability of the taught and quick or slow response in this respect is more or less proportionate to the mental ability of a pupil.

Survey of achievements of pupils of Std VIII in the subject of mathematics.

The aim of the survey is to give the number of slow learners and factors affecting the present problem.

Sohools from the areas having different socio-economic and cultural strata have been selected for the survey of the annual examination in the subject of mathematics students of Standard VIII have been the basis of the present study. The achievements of standard VIII pupils in the subject of mathematics of eight prominent schools situated in four different zones of the city of Ahmedabad have been studied.

The details of the aforesaid zones are as under :—

Zone-I :—It covers the area in the eastern part of Kalupur Railway Station.

Zone-II :—It covers the area within the city walls of Ahmedabad City.

Zone-III :—It covers Maninagar area i.e., South part of Ahmedabad City,

Zone-IV :—It covers Ellis Bridge i.e., Western part from the Sabarmati River.

TABLE-1 : Area and the Selected Schools.

Serial No.	Zone	Schools
1	I	A & B
2.	II	C & D
3.	III	E & F
4.	IV	G & H

It may be stated that almost all classes of peoples of different economic social and cultural strate reside in the Zones. But Zone IV is the most forward of these Zones i.e., in High level. Zone II occupies the next place and Zone III and I occupy third and fourth position in the present classification.

TABLE-2 : List of Selected Schools showing the Strength of students in each one (Students of Standard VIII only)

Serial No.	School	Total number of Students
1.	A	50
2.	B	50
3.	C	45
4.	D	55
5.	E	60
6.	F	40
7.	G	40
8.	H	60
		Total=400

TABLE-3 : Showing details of tha Annual examination of Standard VIII in the subject of Mathematics.

Serial No.	School	Number of Students & Percentage of marks obtained by them.				
		More than 80%	50 to 80%	35 to 49%	34 to 20%	Below 20%
1.	A	4	15	15	6	10
2.	B	3	10	13	15	9
3.	C	5	15	10	9	6
4.	D	7	20	10	13	5
5.	E	5	13	22	7	13
6.	F	4	10	12	10	4
7.	G	10	7	13	8	2
8.	H	15	25	10	7	3
Total......		53	115	105	75	52

From the above table, it is observed that 127 students i.e., 31·75% are below the passing standerd of 35%. Such pupils are termed as slow learners and abbreviated in short as S. L. henceforth. 105 students who get marks between 50% and 35% are termed as average learners and the abbreviation for such students will be A. L. henceforth 168 students are getting more than 50% marks are identified as fast learners and abbreviation therefore is F. L. henceforth.

TABLE-1. Zone wise classification of Students of Standard VIII on the basis of F. L., S. L. and A. L.

Serial No.	Zone	School	F. L.	A. L.	S. L.
1		A	19	15	16
2		B	13	13	24
3		C	20	10	15
4		D	27	10	18
5		E	18	10	18
6		F	14	22	20
7		G	17	13	10
8		H	40	10	10

TABLE-5

Summary	percent S.L.	percent A.L.	percent F.L.
Zone I	40	28	32
Zone II	33	20	47
Zone III	34	34	32
Zone IV	20	23	57

In the comparative study of F.L., A.L. and S.L. of all the four Zones, there are 127 S.L., Still however in Zone IV the percentage of S.L. is lower than that in other three Zones. It is found that Zone IV is better placed in view of Socio-economical and Cultural strata therefore percentage of S.L can be low.

In our survey, we find that there are 31.75% S.L. This is not satisfactory at all. To find out reasons defacto, a sample survey has been made by interviewing 40 students from the lot of S.L. Such 10 students from each zone were personality contacted to find out why they could not do well in the subject. A list of the most common reasons given by them are as under.

1. Mathematics is a hard subject for them.
2. Lack of interest in the subject.
3. Lack of learning aids and materials.
4. Financially weak-more or less socially backward.
5. Want of suitable guidance in the subject.
6. Non-Sympathetic attitude and un-encouraging treatment of the teachers concerned.
7. Quite ignorant about the purpose for which the subject mathematics is taught.
8. No aptitude towards the subject.
9. Irregularity in their daily study.
10. Health Problem.
11. Time Factor.
12. Anxieties.
13. Domestic Problems.
14. Teachers and School atmosphere.
15. Syllabus of mathematics and related text books.

Vague notions about the Subject :

Now a days some vague notions are prevailing among people and specially high school students that mathematics is a very tough subject and the same is difficult to grasp even. This is absolutely a wrong notion as no scientific explanation is available for the same. It seems to be an allergy for the subject. This results in students avoiding to learn the subject totally. It is also further observed that even the teachers of the subject today, either with a view to creating their big image or to hide their poor knowledge of the subject, impress upon students that mathematics is a very dull and also a very hard subject to understand easily. The result of this is that unnecessary fear for the subject is created in the minds of the pupils. Let us now take up various such undue beliefs.

1. Blind-Followers :

Some students take it for granted that the subject is very hard while other students even without having look into the subjects follow opinion of those students and say that the subject is very hard.

2. Irregularities :

Irregularity by way of irregular attendance neglecting home work in the mathematics absent mindedness during the subject teaching, carelessness in bringing text-book of the subject in the class room and also not particular about compass box etc., coming late in the subject period and keeping themselves engaged in the work other than that of the subject. Such factors disturb their study of the subject as they break the entire link. It is natural that they find the subject difficult as they have absolutely no idea of what was taught in the previous periods.

3. Mathematics Teachers :

It is observed in many of the schools that the subject teachers are lacking the full knowledge of the subject. Moreover they go for teaching the subject without any previous preparation and even without required planning for the subject which they are required to teach. Even they are not free from the wrong concepts about the subject and they are found to ignore modern teaching methods and techniques. They take up teaching work without gathering informations about taughts in respect of their abilities and grasping powers in the subject.

In some of the schools it has been found that teachers who have not been trained n the subject and some times teachers even having no knowledge of the subject are engaged in the mathematics teaching. The teaching of mathematics should be taken up by only the expert and trained teachers of the subject. We ari sorry to write that no attention is being given to such important aspect by the authorities concerned. In some cases it is observed that the teachers consider the teaching of mathematics in class-room, to be merely a routine work and as such the subject teaching becomes dull and unresponsive. So the students find it difficult and also uninteresting and boring.

4. Subject Syllabus :

It has also been observed that syllabus of mathematics for standard VIII is not planned properly. It seem that planners have overlocked that there are various types of students in a class i.e, F.L., A L., and S.L, So rythem of teaching in the class is not maintained. More over the syllabus is not constructive as it does not keep a student in the centre. Therefore the syllabus of the subject should be well graded planned after keeping in view interest, need and age of the students. This can be done only when matured, well experienced and expert teachers of the subject plan the syllabus.

5. Text books :

There are many irreqularities observed in the subject text-books like no proper expressions of the subject matters, sometimes defective information, absence of relating charts, pictures, graphs and relating tables. In some chapters of the subject text-book, the compilers of the text-books have overlooked the maxims and principles of teaching learning. Sometimes exercises and model examples relating to a particular chapter back in proper order and are sometimes insuffıcent for the students to have a perfect grasp of the said topic. It can be conluded from the above factors that the students feel the subject to be very difficult.

6. Individual differences :

In a particular class, there are different categories of students as regards. (1) Socio-economical and cultural strata (2) F.L. (3) A.L. and (4) S.L. Now what happens that a teacher cannot satisfy the hunger rather requirements of F L., A. L. and S L. simultaneously. As such a problem is created as to how to handle all these categories in a satisfactory way. If a teacher devotes more attention to F.L. only, it is quite possible that A.L., and S.L. will have to suffer in learning the subject. So at this stage, it can be suggested that in a particular chapter of the subject text-book, there should be enough exercises, specially made out for S.L. So that such students get sufficient drilling in the said unit. Moreover, the subject teacher should pay his/her personal attention to S.L. when the subject is taught, and also spare sometime after school hours so as to bring S.L. to a required level. S L. should have an easy access to the subject teacher and so they can approach him without any hesitation in their mind.

Suggestions for Imparting Mathematics teaching to S.L. :

1. Individual assessment of students should be made and sound reasons for them for being S.L should be found out.
2. The notion that mathematics is a difficult subject should never be allowed to enter their mind.
3. The syllabus should be in accordance with the interest of students and their aptitude towards the subject.
4. The syllabus should be planned out in such a way that it is life centred and oriented from the students surroundings.
5. It is expected that syllabus should be planned keeping in view the country on the whole and also culture of the country. Due to immense development in the fields of science and mathematics in the world, it is necessary that our country should also find place with these developments and do not lag behind. As such, syllabus planning should be based on keeping in view the need of a student, society and the nation at large.

(6) Text-books :

There should be a special text book for S.L. and it should be written in such a way that S.L. find no difficulty in working out exercise and also understanding contents of the book. Of course, this suggestion is not feasible for a poor country like Bharat. Therefore, it is suggested that the text book for the subject should provide the needs of the S.L. There should be well developed auto-instructions materials like programme learning materials and well drawn out assignments concerning the subject. With the aid of these materials, S.L. can study the subject effectively at his convenient time and at his own speed.

Interest in the subject of Mathematics :

In order to create aptitude towards the subject of mathematics, it is most essential that all efforts should be made to increase a student's interest in the subject. The teaching method of a teacher plays an important role to solve this problem. His methods should be such that a student is not bored but on the contrary he/she should be made interested to know more and more about the subject. The students should be made to feel that subject is not difficult and it is just like an indoor game. The students, teachers and principal form a machinery for teaching of mathematics in a school. The mutual relations between a student and the subject teacher, between a teacher and principal and between a principal and students make entire machinery to run smoothly. It is expected that a student should feel that his teacher is more than his friend, philosopher and guide.

Over and above what is said before, the school is also expected to enforce elaborate efforts for the implementation of the standard of mathematics teaching in it. It should be equipped with sufficient reference books on the subject, magazines of the subject and special newspapers on the subject, which are published from time to time. The school should form a Mathematics Association under the guidance of the subject teacher and the principal of the school. Such association should take up various activities like mathematics exhibitions and fairs at regular intervals and also invite experts of the subject to deliver lectures in the school. A competition in mathematics in the school will attract many students towards the subject. The winners in the competition should be awarded prizes and therefore it is likely to divert the students in this direction.

The frequent contacts with the guardians of the pupils and discussing with them their domestic problems and other difficulties will create a healthy atmosphere for the students and will accelarate progress of the students in the subject.

The last but not the least, it is suggested that the subject teacher should maintain a progress record of every student in his ward and keep a careful watch on his day to day progress and complete guidance should be given to such students so that they may show better achievements in the subject.

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Asian Journal of Psychology and Education.
1984, Vol. 13, No. 3 Page 37—40.

SUBJECTIVE SCALING IN TIME ESTIMATION

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University of Sagar

INTRODUCTION

The scaling theory has been developed quite extensively in recent years (e.g. Jorgerson, 1958; Gullikson and Messick, 1960), but the only attempts to apply it to the time estimation problem are those made by Hartley (1968) and Baker (1963). Thus an attempt to outline them has been done in the present paper.

If verbal responses can be identified as a category on the subjective scale, the verbal estimation and operative estimation can be compared. In verbal estimation, the magnitude is specified by the experimenter and the proper category is identified by the subject, while in operative estimation the subjective category is identified by the experimenter and subject's task is to specify the corresponding magnitude. Hence in comparing the two methods, the essential requirement is clearly to specify which is the subjective scale category and which is the corresponding magnitude. The basic difference between the two methods is in respect of whether it is the experimenter or the subject who identifies the subjective category. It is due to these facts that some investigators speak of negative relationship between the two methods. For example—if it is assumed that the relationship between the subjective and the physical scale is continuous and that it is not affected by the method used. Now, if the subject is given an interval of 5 seconds, using the method of verbal estimation, and estimates it at 6 then his subjective scale unit for this order of magnitude are smaller than clock units. Given the above assumption, if the subject is asked to produce 5 seconds by the method of operative estimation, he will produce an interval of 4 seconds. Thus when the subject's response in verbal estimation will give a positive deviation from the standard, and in operative estimation a negative deviation from the standard will be obtained.

As an illustration Clansen (1950) found that the method of verbal estimation gave consistant 'over-estimaton', for the periods of 5, 10 and 15 seconds. On the other hand he found that method of operative estimation gave a general tendency to 'under-estimation' for the 10 and 15 seconds intervals and 'over-estimation' for the 5 seconds interval. In the latter case, this means that the subject's production clock time (corresponding magnitude) was greater than the verbally stated time given by the experimenter-this specifying the subjective category. In this it seems that the use of the term 'over estimation' by Clausan has been inconsistent. In his first use of the word he is referring to the excess of the subjective category. over the corresponping magnitude, whereas in his second use of it he is referring to the excess of the corresponding magnitude over the subjective category. If the first use is taken as standard, the second 'over estimation' is really an under-estimation'.

But in the case of verbal estimation the subjective temporal units are smaller than clock units because more of them are allocated ; whereas in operative estimation the subjective temporal units are longer than clock units because fewer of them are named in relation to the objective time of the judgement.

It is, thus suggested that the wisest use of 'over-estimation' is to use it in the sense of psychological time adative to government time i.e. subjective temporal units are smaller than clock units, or the internal clock is running faster than the external clock.

This analysis effects the Clausen's conclusion from his results that the high negative correlation between verbal estimation and operative estimation suggests that they are measuring the same function inversely. In Clausen's study, there has been a pairing of a subjective category with a magnitude which is not its corresponding magnitude, so that the inverse relationship is an artifact of the quantities chosen for correlation and does not give any information about the subjective scales resulting from the two methods of estimation.

To overcame the difficulties of the kind considered ; and in order to specify without ambiguity the direction of error, the following approach is suggested (Baker, McKetter, and Hartley, 1962). If the subjective time scale is some function of clock time then, for a given magnitude ;

$$0 \geqslant (SC - CM) \geqslant 0$$

Where SC=subjective category, CM=corresponding magnitude as measured by some external, independent scale and SC-MC is the discripancy in scale reading between the subjective and the physical scales (Operationally, SC means 'Verbally stated or conceptual, whether enunciated by E or by S). If clock time is taken as standard then the subjective scale can be considered as giving a positive error, a negative error, or a zero error.

In terms of psychological scaling given by Stevens (1958, p. 182) verbal estimation is a magnitude estimation method, in which subjects response follows the presentation of single stimulus, whereas operative estimation is a magnitude estimation method, in which the estimate precedes the single stimulus. According to slightly different classification used by Stewens (1950, p. 54), verbal estimation become a magnitude estimation and operative estimation becomes a magnitude production estimation method. On the other hand reproduction is a differential sensitivity method (Targerson, 1958, p. 132) and is of the type initially advocated by Fechner (Luce and Edwards, 1958). The subject is presented with a standard stimulus and a continuously variable comparison stimulus. His task is to adjust the comparison stimulus until it appears equal to the standard (Torgerson, 1958, p. 136).

Such a method is based on the concept of the equality on the psychological continum of just noticeable difference. For example, if a stimulus B is just noticeably greater than A, and C is just noticeably greater than B, then the distance on psychological continum that separates A and B and B and C will be equal.

The notion of JND is not simple and straight forward. Targerso (1958,p. 134) distinguishes between the view of classical psychophysics and the 'objective view'. In classical psychopysics JND and DL is defined in terms of the size of the increment (or decrement) that must be added to a standard stimulus before the variable stimulus arouses a sensation which is noticeably different from the standard.

The classical psychopysics point of view is familiar one. Hence the need to discuss it here is not felt. It is associated especially with Titchner (1905) and Urban (1950) The objective point of view, first advocated by Jastraw (1888) is associated with Thorndike (1910), Thurstan (1948) and Targerson (1958). From this stand point DL is simply a measure of the differential sensitivity of the subject. The traditional notion of sensation is dispensed with entirelly as far as the responses of the subject are concerned. It judges stimuli not sensations The DL as a measure of differential sensitivity is best stated in terms of the disperson of the subject's distribution of errors, e.g. the probable error, standard error, standard deviation, or perhaps, in the case of a give functions the maximum slop.

Given the definition of what is to be meant by equality of intervals, i.e. quality of JNDS, it is necessary only to devise experimental methods for obtaining uds in order to obtain a scale possessing a unit of measurement. In the case of reproduction method, analysis of data will yield a point of subjective equality (PSE), constant error (CE) and a subjective scale. Clearly, the type of scale generated by this method will be different in general from scales obtained using different methods and different assumptions.

The magnitude estimation methods and the differential sensitivity method are derived from two different hypotheses. One hypotheses gives rise to the magnitude estimation method and the empirical equations known as Steven's power law, and the other hypothesis generates the differential sensitivity methods and Fechner's logarithmic law. The two hypotheses are :

1. The magnitude of time can be classified directly by the subjects along a psychological continum of time.
2. The classification of the magnitude of time along a psychological continum by the subjects is dependent upon the detection of sensation differences which are defined as equal (i.e. sensation judgs are equal).

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 41—44.

A COMPARATIVE STUDY OF PERSONALITY TRAITS OF HIGH AND LOW ACHIEVERS

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Two groups of high and low achievers (each consisting of 45 pupils) were selected, from 408 pupils studying in class VII & VIII at H.B. Inter College, Aligarh, on the basis of their final examination marks. They were matched with respect to age, educational & socio-economic levels. Their personality characteristics were compared with the help of Cattells High School Personality Questionaire. They significantly differed on seven factors e.g. : Factor A, Factor B, Factor E, Factor G, Factor H, Factor Q_2 and Factor Q_3.

INTRODUCTION

The problem of academic achievement has attained new proportions in present times. It has started posing big challenges to educationists every where in the world. It is especially so in countries like India where population growth has over stepped the process of taping of their natural resources. As a natural consequence, the intensely increasing educational needs have not been met with the needed facilities. This lag between educational requirement and the means to accomplish them has resulted in the from of a sharp and constant decline in academic standards. The problem of deteriorating standards has forced the educationists to thoroughly probe the factors that effect the pupils achievement in schools at all levels. Many studies have been devoted to the purpose and a large number of factors related to personality and environment have been traced. Initially, in a few of these studies, intelligence was found to be the most potent factor (e.g. : in one by Rosenfield and Nemzek, 1938).

Later studies discovered many other factors. Harris (1940) summerized the results of such investigations and found that there are many factors like attitudes, interests, health and those related to personality that have been reported as correlates of school performance. In comparatively recent studies personality factors have been emphasized most. In an Indian study by Dhaliwal (1971) personality factors like emotional stability, obidience, and soberitey have been reported as linked with pupils' achievement. Earlier Lavin, (1965) had prepared a list of 76 such factors ranging from 'higher achievement motivation to 'low conformity to peer group standards.' But, incidentally, these studies do not provide with conclusive evidence of the relationship between personality factors and school achievement as Lavin himself had observed and said that in most of these cases relationships are quite weak and findings are occassionally in consistent. It is this particular aspect of these studies that compelled the present investigators to feel that more needs to be done in the area.

METHOD

Two groups of high and low achievers were selected out of a total of 408 pupils studying in class VII and VIII of A. B. Inter College, Aligarh. The selection was made on the basis of their total achievement scores (T-scores) which consisted of their final examination marks in English, Hindi, Maths, Science and Social studies. High achievers and low achievers were top 25% & bottom 25% respectively of the total sample. Both the groups were matched in respect of age, educational and socio-economic levels. Both the groups were administered Cattells' H. S. Personality Questionaire. The performance of both the groups on 14 factors included in this questionaire was compared with the help of *t*-test.

RESULT AND DISCUSSION

The results show that the two groups differed significantly on seven factors. These factors are Reserved Out going (A), Less Intelligent-More Intelligent, (B) Obedient-Assertive (E), Expedient-Conscientions (G), Undisciplined self conflicted-controlled (Q_3).

On Factor A the High Achievers are found to be reserved detached, critical and cool as opposed to outgoing, warm hearted, easy going and participating which are the characteristics of low Achievers.

On Factor-B, obviously the high achievers fall in the more intelligent category. On Factor E, once again the high achievers are found to be, assertive, independent, aggressive, stubborn and dominant as opposed to being obedient, mild, conforming and submissive.

On Factor G, the high achievers show themselves as consientions, persevering, staid, rule bound & also as having strong super ego. The low achievers on the other hand are found to be expedient evading rules feeling few obligations, and having a low super ego strength.

TABLE : (Showing personality scores).

HSPQ Factors	H. A. Gr. M	H. A. Gr. SD	L. A. Gr. M	L. A. Gr. SD	*t*-Value	L. S.
A	3.70	1.78	5.37	1.42	5.16	.01
B	6.63	1.73	5.43	2.00	3.08	.01
C	4.82	1.27	5.37	1.49	1.90	NS
D	6.00	1.60	5.77	1.97	0.61	NS
E	7.28	1.46	5.88	1.87	4.00	.01
F	5.39	1.54	5.10	1.60	0.88	NS
G	5.50	1.81	4.84	1.08	2.13	.05
H	5.83	1.68	4.70	1.94	2.97	.01
I	6.72	1.49	6.16	1.50	1.30	NS
J	6.66	1.44	6.41	1.47	0.83	NS
O	7.08	1.65	6.78	1.94	0.79	NS
Q_3	6.21	1.55	5.28	1.85	2.58	.05
Q_3	6.12	1.63	4.08	1.88	2.81	.01
Q_4	6.59	1.45	6.90	1.47	1.00	NS

LS=Level of significance
NS=Not Significant
H. A. Gr=High Achieving Group
L. A. Gr=Low Achieving Group.

On Factor H, the high achievers are found to be ven true some socially bold, uninhibited & spontenons. The low achievers, on the other hand are shy, restrained indifferent & timid.

On Factors Q_2 the high achievers are found to be self sufficient professing own decisions and resoureful while the low achievers are group depentent, "joiners", and sound followers.

On Factor Q_3, the high achievers are controlled, socially precise, self disciplined, compulsive, having high self control, while the low achievers are indisciplined, self conflicted, careless of protocol, following own urges and having low integration.

The over all picture emerging from the findings of the present study appears very encouraging. The high achievers seem to stand quite apart from the low achievers seem to stand quite apart from the low achievers in respect of their personality structure and dynamics. The schools may be benefited from an awareness of this difference between the two in so far as they may consider it necessary to plan their curricular and cocuricular activities in such a manner that will be conducive to the healthy growth of the personality of pupils and consequently, will promise for higher academic achievements.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 45—48.

A COMPARATIVE STUDY OF PERSONALITY FACTORS (16 PF) OF PRISONERS STAYING IN PRISON FOR SHORT TIME AND LONG TIME

M. L. Tiwari and Gopal Singh
M. L. B. Arts & Commerce College, GWALIOR-474001

INTRODUCTION

Crime and criminality are subject to analysis and explanation not only from the point of view of criminal's reaction themselves but also as societal reaction to crime. Unfortunately social scientists have concentrated on understanding and explaining law breaking itself rather than the societal reaction to law breaking. In the absence of societal reaction certain theoritical problems in controlling crime arises and problem of criminal etiology remains undefined. In most of the ancient and meadible societies criminal was given penality without keeping him in prisons. Later on the process of imprisonment was started by religious and other agencies and now the concept of imprisonment in houses of correction is prevelent due to humanitarian thinking. This variation in punitive policies has created certain problems before social structure. Present society feels that Jails are not working efficiently in bringing correction in criminal's behaviour through the process of imprisonment. The aim of present investigation is to see whether the punitive policies in Indian Jails are wrong and inefficient or the societal reaction in itself is wrong or the criminals are kept really isolated from law avoiding persons or the criminals of all sorts, whether professional and occational criminals do posses the same type of personality; whether possibility of correction in their personality becomes less irrespective of the type of punitive policies atongwith variation in punishment adopted for the sake of correction.

Due to many limitations, Indian Jails are not well equipped, hence they are unable to fulfil the basic goals of imprisonment, for example—Theoritically by imprisonment they are kept isolated from law ablders but practically in Jails all sorts of criminals professional Vs occational are kept in such a condition that they may remain in interaction to each other for a longer time. Hence a fresh criminal is allowed to meet those professional criminals who are law abiders and subjected to a peculiar type of training through law abiders. This condition is conductive enough in patterning personolity structure of both type of prisoners is more or less same manners.

METHOD

The above hypothesis has been varified by present investigator by carefully administering sixteen personality factor test (R. B. Cattell's) on short stay prisoners and long stay prisoners staying in Gwalior Central Jail under punitive policy.

Out of 900 prisoners for purpose of two rendomised match group design study 110 subjects were selected (55 subjects in each group) for final study.

ANALYSIS AND INTERPRETATION OF DATA

The purpose of study is to see wheather observable differences between the personality structure of prisoners of both types through their responses. When converted in to sten scores and for the purpose of knowing second order factors of personality. The whole of the analysis was based on manual of 16 P. F. In under mentioned table mean responses on each four factors of both the type of subjects along with their '*t*'-values, degree of freedom and level of significance is given.

TABLE : Comparative picture of personality of short & long Jail stay prisoners.

Sr. No.	Factors	Mean of I Group (Longstay criminals)	Mean of II Group (Shortstay criminals)	Value of '*t*'	Degree of Freedom	Level of Significance
1.	Adjustment vs Anxiety	6.25	6.46	.67	54	0 05
2.	Introversion vs Extraversion	4.91	5.11	.24	54	0.05
3.	Tenderminded emotionality vs Alertpoise	4.00	3.86	.16	54	0.05
4.	Subduedness vs Independence	4.88	5.52	.73	54	0.05

DISCUSSION

It is quite apparent after viewing the result that both type of criminals do not differ from each other. After statistical treatment on second order personality factors although some difference on mean scores is clear. Meaning there by that both type of prisoners posses more or less same type of personality. Either such result may be Interpretated on the basis of biogenesis or on the basis of equal type of acquisition. It was expected that due to long imprisonment long stay prisoners should differ markedly from those of short stay prisoners due to penality or curative condition could not modify the factor of personality (Adjustment vs Anxiety, Introversion vs Extraversion, Tenderminded Emotionality vs Alertpoise, Subduedness vs Independence) to a marked level.

When both types of criminals were compared on the basis of their response picture drawn on personality profile certain minor differences on certain personality factors have been observed just as long stay prisoners in most of the traits have been fallen between average 5, 6 and below five sten scores except on guilt pronness factor (o) whereas short stay prisoners have shown their placing between 3 and 8 sten scores they have been found to be more suspicious, self-opinionated, Hard to fool, guiltprcne, Artless, Sentimental and Forthright and more critical liberal, Analytical, and free thinker meaning their by that either these personality traits were with them prior to imprisonment or due to nature of interaction with proffessonal criminals or long stay criminals in Jails which modified their personality in above said manner. It is clear on the basis of result that on the one hand criminal imprisoned for either for short term or for long term do not differ significantly. On the other hand the nature of conducive condition provided to them for improvment in their personality in Jails are not sufficient.

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4. Page 49—51.

ATTITUDE OF TEACHER TRAINEES AND THEIR PARENTS TOWARDS TEACHING

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Similarities of teaching attitudes of 120 teacher-trainees and their parents were studied by means of Minnesota Teacher Attitude Inventory. The results suggest that (a) parents are relatively similar in their attitudes towards teaching, (b) a fair positive relationship exists between the attitudes of trainees and those of their parents, (c) trainees tend to identify ihemselves with the attitudes of the parent of the same sex, (d) sons are most permissive in their concept of teacher-pupil relationships while duughters are less so, and (e) fathers and mothers tend to be more authoritarian than do their children of either sex. The study confirms that parents do have a role in helping form the professional attitudes of those of their children who become teachers.

INTRODUCTION

Factors that build attitudes towards teaching and pupil-teacher relationship are somewhat difficult to identify. Riccio (1959), in a survey of the studies on teacher attitudes, identified such related varibles as personality traits, values, experiences and academic attitudes. A variable often overlooked is the role of parents in helping form the professional attitudes of those of their children who go in for teaching. The present study is an attempt in this direction. The author investigates into the possible relationships between professional attitudes of teacher trainess (teacher education students) anther parents. The points examined were : the degree of similarity, if any, between the attitudes of trainees and their parents ; whether the trainee tends to identify more with one parent than with the other ; the degree of relationship, if any, between a student's parents.

PROCEDURE

B. Ed. teacher trainees, 120 in number (75 girls and 45 boys), of State College of Education, Patiala were administered Minnesota Teacher Attitude Inventory (MTAI-1952) in a classroom session at the close of their course. The subjects were postgraduate in Arts or Science in the age-range 21-24 years. A month later inventories and a forwarding note (stating that we were interested in parental attitudes towards education) were sent to parents of the subjects. Both parents of a trainee were required to answer the inventory. They were required to avoid showing their answers to each other.

RESULTS AND DISCUSSION

The data in Table 1, showing the relationship between the MTAI scores of trainees and those of their parents, suggests three trends : significant similarity between parents' attitudes ; significantly similar attitudes of students and their parents ; and, though tenuously, the students' attitudinal identification with the parent of the same sex. Daughters and mothers show a higher relationship (.43) than do daughters and fathers (.19). Similarly the son-father correlation (.35) is higher than the son-mother correlation (.21). Although these differences were not statistically reliable, these were not unexpected in view of similar results reported in studies made in other areas of parent-child identification. Father-son and mother-daughter identifications were shown in a study of values (1956) and again in a study of interests (1958).

Table-2, showing the means and standard deviations, indicates that the variance is homogeueous for all groups, though the means are significantly different.

TABLE-1 : Product-Moment correlations between students and parents' MTAI scores.

Group	*r*	N
Trainees-fathers	·32**	120
Trainees-mothers	·36**	120
Mothers-fathers	·52**	120
Sons-fathers	·35**	45
Sons-mothers	·21*	45
Daughters-fathers	·19*	75
Daughters-mothers	·43**	75

** Significant at ·01 level of significance
* Significant at ·05 level of significance.

TABLE-2 : Means and Standard Deviations of MTAI scores for students and parents.

Group	N	M	SD
All trainees	120	32·3	24·9
Sons	45	37·2	25·2
Daughters	75	22·4	22·3
Mothers	120	4·7	28·7
Fathers	120	2·9	25·4

As the MTAI reflects on an authoriatarianism-permissiveness continuum (higher positive scores represent permissiveness in teacher-pupil relationships whereas low positive or negative scores indicate authoritarian attitudes), it may be possible to rank sons as most permissive with daughters, mothers and fathers following in that order. Perhaps an age as well as a sex variable is operating here.

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Asian Journal of Psychology and Education.
1984, Vol. 13, No. 2, 3 and 4, Page 52-53.

CASTE DIFFERENCES IN RISK TAKING BEHAVIOUR

G. S. Gupta & P. N. Arora
Govt. Raza P. G. College, Rampur (U. P.)

INTRODUCTION

To take risk in different environmental situations is an interesting phenomena in human life. Risk taking behaviour has its own significance in human life, where on one side it prepares a person in coping with the dangerous situations, at others it helps in channalization of abundance body energy in various creative ways.

Generally, by the term risk we mean a dangerous element or factor, where an individual is put willingly or unwillingly in that situation. Risk is a condition where there is a possibility of the occurance of loss as a result of a deviation from the intended or expected situation (Hobrin, 1974). Chaubey (1974) is of opinion that risk is a condition where both the aspects of a thing are clear to enterpreneur and the outcome clearly defines success and failure. Yausuf (1974) defines the term 'risk' as a part of boarder aspect of decision making

Caste, on the other hand is a very important determinant of socio-economic structure. Every caste has some unique characteristics which affect the personality of the individual in significant way. Higher castes occupy higher position in the society for they are supposed to be superior in various abilities to lower castes.

It has been proved from various studies that caste affects the perception, thinking, emotions, power motivation, n-ach and other behavioural characteristics. In a series of studies to find out the influence of caste characteristics on risk taking behaviour, Chaubey (1974) observed that (a) caste appears to play a significant role in the risk taking perferences in the boys of undeveloped villages and (b) caste does not seem to have any impact on the risk taking behaviour of adults of undeveloped villages.

The purpose of this study is to find out the affect of various caste characteristics on the risk taking behaviour of individuals belonging to various castes.

METHODOLOGY

Sample : The study was conducted on 40 male literate adults of various castes. 10 *Ss* were taken randomly from the each caste i e., Brahmins, Kshtriya, Vaish and Schedule caste. The four grops thus obtained were matched strictly with regard to socio-economic-status.

Tool : Aora Risk taking Questionnaire (ARTQ) was applied to measure the magnitude of risk taking behaviour of the Ss. The questionnaire is prepard by Arora (1980) in his Ph.D. dissertasion. The inventory is a five point scale and it measures the magnitude of risk in 8 areas namely (1) hills, (2) space, (3) sea, (4) commercial trades, (5) police, (6) fire, (7) different vocations, and (8) military service. Each are a has 5 items and the total 40 items are there in the test. Its split-half reliability is .84 and validity is .79 against Yausuf's opinion questionnaire (1974).

ANALYSIS OF DATA

Analysis of varience technique was applied to find out the significance of difference between the risk taking scores of the Ss belonging to various castes.

RESULTS AND DISCUSSION

The result shows that there are significant differences in the risk taking behaviour of various castes taken in the study i.e., Brahmian, Kshtriya, Vaisha and Schedule caste. The obtained results do not corroborate the findings of Chaubey (1974). The difference in results can be attributed to areas of sample. One probable cause of significant difference in risk taking behaviour among various castes can be attributed to the particular historical traits of each caste right from the time of Aryans. And from centuries heredity is contributing the same wealth of traits to the offsprings.

The conclusion of above study is that caste characteristics affect the risk-taking behaviour of the individual in a significant degree. By summerising the influence of caste characteristics on individual personality, our beloved late prime minister pt. Nehru (1956) has said-"through out our history casticism was a weakening factor and one might perhaps say that along with the growth of the rigidity in the caste system, grew rigidity of mind and the creative energy of the race faded away."

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Asian Journal of Psychology and Education
1984, Vol. 13, No. 2, 3 and 4, Page 54 – 58.

ATTITUDE OF MALE AND FEMALE TEACHER-TRAINEES TOWARDS TEACHING : A COMPARATIVE STUDY

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The present study was conducted to compare the attitude of male and female teacher-trainees towards teaching. 'Teacher's attitude Inventory' by S. P, Ahluwalia was given to 52 male and 48 female teacher-trainees. No significant difference was found between the attitude of male and female teacher trainees towards : teaching profession, classroom-teaching, pupil-centred behaviour, educational process, pupil and teaching as a whole but however the difference between the attitude of male and female teacher-trainees towards teacher was found to be significant at 0.05 *level of confidence.*

INTRODUCTION

Attitude plays a dominating role in shaping human behaviour. Attitudes have been defined in a number of ways, Allport (1967) viewed attitude as a 'Mental and neural state of readiness.' Doob (1967) viewed it as 'an implicit, drive-producing response', while Freedman (1970) described it as 'an attitude towards any given object, idea or person is an enduring system with a cognitive component, a feeling component and an action tendency. Attitudes are generally believed to influence the behaviour. (1972 Cited by Louis Vernal). Attitudinal dispositions are responsible in influencing the teacher's effectiveness (Patnaik and Panda, 1982). In 1978, Ahluvalia made an attempt to study a change in professional attitude of student teachers and reported that the mean difference of pre-and post test for the male and female student-teachers was found to be non-significant. Srinivasacharyulu (1979) investigated into the attitude of teacher-trainees towards practical aspects of B. Ed. programme and reported that practice-teaching is favoured by female teacher-trainees but the opinion was found not to be significant for rural and urban, experienced and unexperienced teacher-trainees. Singh and Dash (1980) studied primary school teacher's attitude towards six educational issues, using Ahluwalia' Teacher's attitude inventory, and arrived at conclusion that sex difference was significant in four scales but age difference in none. Interaction wise increasing age, male teachers show less favourable attitude, Yadav (1981) conducted a study on attitude towards teaching profession among teacher-trainees and reported that sex, place of living, parent's occupation, subjects, and previous training were found to have no impact on the attitude of teacher-trainees towards teaching profession. Josh and Darzi (1981) dealt with a study of the attitude of teacher's towards teacher education programme and concluded that women teachers as a whole had a higher favourable score than men teachers, highly qualified teachers had a higher percentage of score than less qualified teachers. But the investigator could not find a study in the attitude of teacher-trainees towards teaching independently as a whole. So, an attempt has been made here to investigate into the attitude of male and female teacher-trainess towards teaching comprising of six educational issues.

Hypothesis : To pinpoint the present study it was hypothesised that there exists no significant difference between the attitude of male and female teacher-trainees towards teaching, and its six aspects.

Design of the Study :

Sampling process : The present study was conducted on a samle of 100 (52 male + 48 female B Ed. students) teacher trainees of the constituent college, Tehri.

Test Material : The teacher's attitude Inventory developed by Ahluwalia, S. P. (1978) was used to measure the attitude of teacher-trainees towards teaching. This inventory consists of six sub tests :

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(i) Attitude towards Teaching profession.

(ii) Attitude towards Class-room teaching.

(iii) Attitude towards pupil centred behaviour.

(iv) Attitude towards education process.

(v) Attitude towards pupils

(vi) Attitude towards teachers.

It can be administered on adults. It contains 90 statements and responses are to be given on five point scale. The reliability is 0.88 at =239 and possesses content validity.

Administration of the test : The teacher-attitude inventory was administered on the sample. Each subject was given a copy of the test and provided a pencil, if necessary.

The purpose of the testing was explained. The way of answering the questions statements was fully explained. They were told to mark the [√] on the five point answering scale. After completing the test, the investigator collected all the test papers. The subjects took 50 minutes in completing the test.

Scoring : The collected inventory was scored according to the keys for the six subjects separately.

Distribution of Scores : After scoring the sub tests, the investigator computed the meau, S.D. and C.R. for the attitude of the male and female teacher-trainees towards teaching separately. These estimates are presented in the Table-1.

TABLE-1. Measures of Mean, S. D. and C. R. of male and female teachers Trainees' attitude tawards teaching :

Areas of Attitude	Male N=52		Female N=48		C.R.	Level of Significance
	M		M			
Towards teaching profession	41.66	7.61	39.96	6.74	1.19	N. S.
Towards Classroom Teaching	38.20	7.23	39.92	6.55	1.25	N. S.
Towards pupil Centred Behaviour	44.85	6.88	44.73	6.20	0.09	N. S.
Towards Educational process	45.64	7.06	43.70	6.45	1.43	N. S.
Towards pupils	39.56	6.94	40.81	6.71	0.92	N. S.
Towards teachers	42.47	6.84	39.77	6.71	2.00	0.05
Toward TEACHING as whole	254.85	28.81	249.14	27.65	1 05	N. S.

N. S.=Not significant.

RESULT AND DISCUSSION

The table shows that the mean value of attitude of the male teacher-trainees towards teaching profession found to be more than that of female teacher-trainees which indicates that male teacher-trainees had more interest, likes, belief and faith towards teaching profession than the female teacher trainees out this difference between the attitune was found not significant at 0.05 level of confidence, supporting the results of the study of Ahluwalia (1978) and Yadav (1981). The meen value of the attitude of male teacher trinees is less than that of female teacher trainees, perhaps it indicates that female teacher trainees took more interest in class-room teaching which confirmed the findings of Srinivasacharyulu (1970), but the difference between the attitude of male and female teacher-trainees towards class room teaching was found not significant at 0.05 level of confidence which was contradictory to the findings of Singh and Dash (1980). The mean value of the attitude of the male teacher-trainees towards pupil centred behaviour is slight more than that of female teacher-trainees which probably indicates that male teacher trainees were taking more interest in the pupil centred behaviour and were more engaged in it than female teacher-trainees but this difference was found not to be significant at 0·05 level of confidence which could not support the findings of Singh and Dash (1980). The mean value of the attitude of the male teacher trainees towards Educational process is more than that of female counterparts. Perhaps, this is due to the reason that male teacher trainees were given more opportunities to participate in the educational process than that of female teacher-trainees but this difference in their attitude was found to be not significant at 0·05 level of confidence, contradicting the findings of Singh and Dash (1980), and of Joshi and Darzi (1981). The mean value of the attitude of male teacher-trainees towards pupils was scored lower than that of female teacher trainees indicating that perhaps female teacher-trainees got the more opportunities in the closed contact to pupils and so they had soft corners to them than the male teacher trainees, but this difference in their attitude was found not to be significant at ·05 level of confidence. The mean value of the attitude of the male teacher-trainees towards teachers were found to be more than that of female teacher-trainees, and this difference in their attitude was reported to be significant at ·05 level of confidence. Perhaps, it might be due to the reasons that (a) the male teacher trainees were able to have good repports with their teachers and were more influenced by them, and/or (b) The teachers had more concerned with the male teacher-trainees than their female counterparts. The mean value of the attitude of the male teacher-trainees towards teaching as a whole was found to be more than that of the female teacher-trainees but this difference in their attitude could not be reported to be significant at ·05 level of confidence. Thus the difference between the attitudes of male and female teacher trainees towards the teaching as a whole and its six aspects were found but it could not be computed to be significant except for the aspect of attitude towards teachers. Therefore, the hypothesis that there was no significant difference between the attitude of male and female teacher-trainees towards teaching is to be accepted for teaching as whole and as well for its five aspects except in the attitude towards teachers for which it (Hyp.) could not be accepted. Although the difference between the mean values of the attitude of the male and female teacher-trainees is computed for every aspect of attitude towards teaching and also in the case of attitude towards teaching as a whole. Perhaps this difference might be due to the reasons as mentioned above, and due to the climate variations of the practice teaching schools too which were separate for the male and the female teacher trainees.

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